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ORIGINAL ARTICLES.

CAN WE DRAIN THE FALLOPIAN TUBES?

BY SARAH E. POST, M.D.,
OF NEW YORK CITY.

IN speaking of drainage of the Fallopian tubes, we do not refer to artificial incisions, but to the question as to whether in pathological conditions we can utilize the natural outlet of the Fallopian tubes for drainage.

Theoretically, nothing would seem to be more certain than that we can drain the Fallopian tubes through the uterus; practically, nothing seems less to be expected. I have a certain amount of evidence, but evidence that is of an inferential character, and that perhaps requires corroboration in a more extensive field. I have therefore chosen to present the matter interrogatively. In a quiet way I have been studying this subject for the last six years. Reports of a number of the cases thus studied will be found in medical journals as follows: *N. Y. Medical Record*, January 15, 1887; *N. Y. Medical Journal*, September 24, 1891; *Transactions of the American Gynecological and Obstetrical Association*, 1889; *American Journal of Obstetrics*, February, 1891. From these reports it will be seen that I think that by palpation I can diagnosticate a prolapsed and swollen tube; that I can overcome the adhesions that often imprison the collections in these tubes; and that I have evidence of the discharge of such collections through the uterus.

METHOD OF EXAMINATION.—I cannot make this diagnosis *per vaginam* by the index finger alone. I examine by rectum in virgins, and in married women I use my first two fingers, or insert my whole hand up to the thumb. I use the hand corresponding to the side affected. Where the whole hand is employed, I place the patient upon the back, and the palmar aspect of the fingers reaches the patient's opposite side. It will be seen that the examiner's left hand is applied to the patient's left side, and the right hand to the right side, even in the dorsal position. When one or two fingers are sufficient, I prefer to have the patient upon the side, and I believe that a better conception of the conditions is obtained when the affected side is uppermost. Whether this is true or not, a good deal is gained by examination upon both sides. While examination by rectum gives you a nearer access and enables you sometimes to make out the relations of the uterus better, I think that for an appreciation of the adhesions that bind down the tubes the vaginal examination is the more useful.

CONDITIONS FOUND.—Examination may disclose a swelling in the anterior cul-de-sac, directly continuous with the horn of the uterus; a swelling at the side close to the uterus and displaced with it; or, more frequently than either of the foregoing, an adherent mass posteriorly to the uterus, from which the cervix cannot be separated. Any attempt to withdraw the cervix from this mass gives pain. The posterior cul-de-sac is characteristically short and tense. You may be able to outline the tube in this position, or you may not. The first two delineations represent practically the same condition—a collection of pus, or perhaps the peculiar milky tubal secretion, without adhesions, as a rule; the last, a catarrhal condition, with posterior prolapse, peritonitic inflammation, and adhesions binding the mass down. This condition is at least sometimes secondary to the other two. It seems to follow discharge or absorption of the accumulation, when these occur without the precautions of treatment. Apparently the previously distended tube prolapses from loss of tone, and either before or after prolapse retrostalsis of its secretion establishes the adhesions in which it is imbedded. I have twice had return of the lateral accumulation after liberation of such a posteriorly-adherent tube. While the resulting condition was to myself more alarming than the original one, it was without suffering, and the patient, previously regular in presenting herself for treatment, could no longer be induced to continue her attendance at the clinic. Subsequent examination in one of these cases showed disappearance of the secondary collection, the tubes remaining in place.

HISTORY.—The history of salpingitis is, as a rule, very characteristic. Usually it dates back to a severe illness, with confinement to bed, with fever, and pain, for which quieting medicine was required. In the active stages there are profuseness and irregularity in the menstrual flow. Later, with contraction of the adhesions, scantiness in the flow is not uncommon. Sterility is the rule. Dysmenorrhea is present, I think, in all cases. This dysmenorrhea is peculiar; the pain either precedes or follows the flow. A leucorrheal discharge, not thick and tenacious, and that may even be described as watery, is characteristic of these periods. This discharge may

be readily differentiated by its characteristics and history from the product of cervical or endometrial catarrh. The accumulations at the side and in front of the uterus are comparatively without pain. During the intermenstrual intervals the woman with the pus-sac does her work without discomfort. The suffering in the cases in which the displacement is posterior and bound down by adhesions is, on the contrary, enormous. This suffering is not expressed alone in actual pain, but also in the protean forms of hysteria, of which I am inclined to think it the most efficient cause. The patient has sacral and inguinal pain; also, as a rule, difficulty in walking, is irritable and suffers from headache, dizziness, impairment of vision, and other nervous disorders.

THE QUESTION OF DRAINAGE.

Chronic catarrhal salpingitis. Here the question of drainage is complicated with that of the liberation of the tube. I think that in a certain number of cases I have overcome the adhesions that bind down these tubes, have restored them to a somewhat normal position, and have drained them through the uterus. My reasons for thinking this depend upon disappearance of the posterior mass, deepening of the cul-de-sac, relief of pain and discomfort, menstrual regularity, demonstration of an unusual discharge in some cases, and, last, pregnancy after sterility of from four to six years. Of the latter I have reported three cases (*Journal of Obstetrics*, February, 1891).

The treatment has extended over a period varying between six months and three years. As a rule, for the first three months, all procedures must be experimental. By this I mean that treatment must be limited to hot injections and the careful application of tampons. My object in treatment from the first is the stretching of the posterior cul-de-sac. Tenderness determines the degree of pressure that can be borne. In some cases applications of iodine seem to reduce the sensitiveness. When cotton tampons are used, iodine at least does no harm. I have seen no special good from the use of glycerin. The patient is told at the commencement of her treatment just about how long it will take to give her relief, and almost without exception her previous sufferings have been such that she acquiesces with patience in the more or less protracted preparatory treatment. Having established a degree of tolerance in the part, I next introduce the inflated-ring pessary. This is the old-fashioned air-ring. It is inflated to almost its full capacity. As sold, these rings are either too tense or too lax. The tension may be regulated by means of the hypodermatic needle and an atomizer bulb. Upon some part of the circumference will be found a mass of wax. It is through this mass that the needle should be plunged. The bulb may be attached after insertion. This is an important matter, as its degree of tension determines the value of the ring.

In application the ring should be large enough, so that the anterior portion is depressed by the pubic bone, the posterior rising and distending the posterior cul-de-sac. First applications may be painful; if this is the case, the ring should be withdrawn within a half-hour or worn only a short time and reintroduced at the end of two or three days. As a rule, when there has been preparatory treatment, tolerance is perfect from the first, and the results obtained by means of the ring are far superior to those of the tampon. Within a few days the cul-de-sac will be deepened, and with this stretching of the cul-de-sac pain will have disappeared. With the ring in position the patient will walk even from the first the usual distances walked by women and will be surprised at her renewed incapacity when the ring is withdrawn. The difficulty of walking is not alone immediate discomfort, but the production of a train of persistent nervous symptoms. The sufferer from chronic salpingitis must keep still, because if she walks she will have a "nervous headache" as a result, or she becomes "irritable," or "her eyes give out," etc. This woman may have an appearance of health and among her friends the difficulty pass as a fancy, the condition contrasting in this respect with the appearance of the patient in ovarian prolapse. Almost without exception the friends will tell you that the person could walk if she would—that she is, in fact, hysterical and the victim of a fancied incapacity. I regard the difficulty of walking as due to imprisonment of the fimbriated extremity of the tube, which, particularly in walking, is thus subjected to friction between the uterus and rectum. The ring by separating the uterus from the rectum relieves the source of friction and supports the sensitive part, often from the first, even before liberation is effected. The fact of a material basis for the woman's incapacity has been repeatedly proved by her immediate resumption of active habits upon the application of this support. For details I refer to several cases reported in the *New York Medical Journal*, September 24, 1887. After a period varying between six months and a year the cul-de-sac may be found empty and the ring can be discontinued. Presumably the liberated tube resumes its normal position. I have in some cases found a subsequent return of the contraction in the floor of the cul-de-sac, without prolapse of the tube, again fixing the uterus and causing renewed pain. In such a case a return to the ring for a month or two will restore the part to a comfortable condition. In still other cases the patient has, after the establishment of apparent cure,

returned with a sharp attack of inflammation, and, in one case, a renewed accumulation, this time at the side of the uterus. In such a case treatment must be the same as for a primary attack. The ring is not applicable in acute conditions; it should be dispensed with and the patient should have rest from active work. Even without such rest, however, I have at the end of three months found the parts in a condition permitting the resumption of the ring, and with it a return of health. I might add that, even in a condition of great sensitiveness —even in a condition of invalidism—the application of this ring will afford a consciousness of capacity for effort, and in a surprisingly short time even the constitutional appearances of health. While, therefore, the system of treatment may appear tedious, and even unduly prolonged, it does not have this character after the first three months. The patient manages her ring herself, and she does not, as a rule, return to the physician until it has to be renewed. While wearing the ring the patient feels and looks well, she becomes unconscious of her malady, and as time elapses forgets to wear the ring at all; she thus accomplishes her own cure; such forgetfulness, in my experience, indicating absence of the conditions for which the ring was applied.

Perhaps I need not explain that it is difficult for me to mention any considerable number of cases that I can follow further. In some, however, absolute cure, so far as replacement is concerned, does not occur. The patient continues to have intervals of renewed symptoms, and she again and again returns to the ring when thus troubled, or when called upon for unusual work. I have, however, other cases in which absolute disappearance of the difficulties traceable to the prolapse has resulted. The patient has had no need to return to the ring, and she even forgets the details of her former sufferings.

The occurrence of a discharge through the uterus in this class of cases has been pretty thoroughly established. It has happened in a number of instances that the patient has herself reported an unusual discharge of a watery character shortly after commencing to wear the ring. I have associated this discharge in my mind with the liberation and elevation of the tube. It has been irritating in some cases, the irritation subsiding, however, after a few days, without local treatment.

The patient inserts this ring herself. She is directed always to leave it out at night. By this means cleanliness is assured, and the muscular tone of the vagina is preserved. I think, too, that the effect upon the broad ligaments themselves is better than if the support were constant. In removing the ring the posterior fourchette should be drawn backward with the finger so as to admit air to the vagina. Otherwise the patient will pull against a vacuum, and downward displacement of the uterus and more or less pain will follow. In inserting the ring the woman assumes the squatting position. She folds it into a boat-shaped mass, and if well lubricated with vaselin it is inserted without difficulty. She then assumes the knee-chest posture, when it rises spontaneously to the desired position.

Pyosalpinx. I would here like to refer to two cases, both, in part, previously reported.

The first is that of a single woman, aged twenty-two years, who presented herself in November, 1888 (*Trans. Amer. Gyn. and Obstet. Soc.*, 1889), with retroflexion, a mass posterior to the uterus, consisting apparently of an adherent ovary and tube, and at the left side a tumor the size of a walnut, representing apparently a tubal collection. With elevation of the uterus this tumor became softer, and diminished in size. Since the report referred to, the girl has married. She tells me that some time ago her husband contracted a mild type of urethritis that his physician ascribed to his wife's leucorrheal discharge. The woman herself remains practically well—that is, she looks and feels well. She has still a retroflexion, an adherent mass upon her right side, and a pus-sac upon her left. She returns about once in six months with increased size in the tumor, and a return of discomfort. She is tamponed for about a week or longer, and the discomfort disappears while the sac contracts.

The second case (*Amer. Journ. of Obstet.*, Feb., 1891) may be briefly described as a case of sterility, with a cachexia resembling that of chronic tuberculous abscess. The patient was first seen in June, 1888. Examination showed the uterus fixed, and two globular masses also fixed in the pelvis, one posteriorly and to the right, and one on the left side. In June, 1889, the tumors are said to be smaller, less tense, and the uterus more movable. The patient somewhat later discontinued treatment. In September, 1890, she returned with a four months' pregnancy, the uterus being drawn to the right side by the adherent mass. Sugar and albumin were present in the urine shortly before term. The patient was delivered February, 1891. The labor was without complications, but the child had for some days been dead, and the placenta was degenerated, so that it was bloodless, it was said. Convalescence was prompt, and there had been no return of the accumulations, while the cachectic appearance, previously so marked, had been almost lost.

I regard these two cases as cases of undoubted pyosalpinx on account of the persistent refilling of the sac and the urethritis in the first case, and on account of the cachexia in the second. From the history, too, I see no reason to doubt that we have here had drainage through the uterus. In both cases the inflated ring was worn for a period of from six to twelve months. In both cases the present health of the patient is good.

A third case may be added:

This patient came to me in June, 1888. She was a woman of fifty-five years, who had reached the menopause seven years previously. The patient complained of distress on walking, and nocturnal pruritus that often awakened her from sleep. She was not conscious of any discharge. Examination showed a zone of irritable appearance in the neighborhood of the carunculæ myrtiformes. The vagina above was pale and the cervix atrophied. There was retroflexion of the body, which seemed membranous and soft, and yet globular. The examination suggested to me a cystic growth, yet the sound entered to the fundus, and the cavity measured two inches. The examination produced no discomfort. The patient told me that she had at some previous time suffered from a pelvic abscess that discharged through the rectum, but I did not connect this fact with the condition before me. The body could be replaced, and with the patient in the lateral position I inserted a tampon, using two pledgets of cotton, one posteriorly to the body, and one below and in front to keep the first in place.

The patient walked with comfort, went about to a number of stores, and did some shopping that afternoon. She returned in the morning, however, with her napkin and clothing saturated with a watery, vile-smelling discharge, leaving a brownish tinge. This discharge had evidently become established during the night. It persisted for a day or two, when the woman left town (she lived in a neighboring city). I have learned from her physician that she subsequently suffered from a return of her "pelvic abscess," and that the discharge was through the rectum as before. This physician had not had her attention directed to the uterus as a possible means of drainage in this case. The inference seems to me, however, quite justifiable in view of the amount and offensiveness of the vaginal discharge following the use of my tampon.

Follicular salpingitis. I have one case that seems to me to come under this heading:

The patient was a woman, then forty-two years old, who came to me in 1885 with a retroverted uterus and both ovaries prolapsed. Menstruation was profuse, lasting a week. The condition had been of long standing, and the patient suffered from pronounced melancholia and hysterical attacks, with convulsive seizures lasting for hours. (This case is referred to as Case II, *N. Y. Medical Record*, January 15, 1887.) At the date of that report the hysteria had been overcome, and the prolapsed ovaries and uterus would retain a normal position for some days at a time without support. A laceration of the cervix was operated upon December 31, 1887. The patient suffered from hysterical mania after the operation and recovered slowly.

The patient presented herself again May 20, 1888, with pain radiating from the sacral region. I have a very vivid impression in regard to the pain in this case. It was acute and unbearable, contrasting with her former ovarian pain,[1] and keeping her awake at night. The recumbent position gave no ease. Examination at this period showed a mass in the posterior cul-de-sac the size of a hazel-nut and very sensitive. The uterus was in position; the cervix was united and healthy; the ovaries were large, but high and movable.

On May 25th the patient returned relieved of her pain, and saying that she had had a cheesy discharge that could have been scooped from the vagina with a spoon. Examination showed no irritation of the vagina, while the tumor could no longer be found in the cul-de-sac. A series of these enlargements followed. May 30th, a tumor the size of a hazel-nut was found in the left tube a half-inch from the uterus. Several nodules were found also in the right tube. The affection lasted for over a year, with intervals of comfort. The height of distention would always be characterized by great pain, after which the cheesy discharge, and relief followed. On March 13, 1889, I have an entry showing the uterus to be healthy, menstruation lasting but three days, the uterus not fixed, no accumulations, and the parametria not sensitive, although the cheesy discharge at intervals recurred. At the last date mentioned, March 13, 1889, the patient suffered from pain in the chest, and examination showed a questionable condition of the lungs. The signs were obscure. During the year the patient had lost flesh. At the present time the discharge has apparently ceased, the accumulations no longer form, but we have, progressing apparently, a tightening of the broad ligaments, so that the uterus is becoming fixed.

In this case I do not think that there has at any time been a peritonitis, and for this reason it seems to me probable that the shortening of the ligaments is due to cicatricial contraction of the ruptured follicles. The uterus is now in retroversion, but the ovaries are high; and unless doing very hard work, or trying to walk a long distance, the woman feels comparatively well. She has regained a good weight, and looks well. She sleeps, being no longer disturbed, as during the most of her previous menstrual life, by pain. She is able to do her housework, including her washing. It seems probable that with the establishment of the menopause the cicatricial tissue will support the retroverted uterus so as to give her complete comfort. A pessary or tampon of any description cannot now be worn.

Follicular salpingitis has been described by Martin. I have no particular example with which to compare my case, but the history seems to me to point to this disease.

The treatment has been limited to the use of the

[1] I might add that the nervousness of salpingitis also contrasts markedly with the depression and melancholia characteristic of ovarian cases. In my experience the ovarian cast of countenance is never assumed in salpingitis. If at ease and spared exertion, the patient suffering from salpingitis is cheerful and looks well.

hot douche, and, during the earlier stages, support. With the progress of cicatrization, as I have explained, support has ceased to be borne.

The question of discharge through the uterus does not, I think, admit of doubt in this case.

LITHEMIA.[1]

BY A. STEWART LOBINGIER, M.D.,
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF COLORADO; PATHOLOGIST TO THE ARAPAHOE COUNTY HOSPITAL; PATHOLOGIST TO THE DENVER WOMAN'S HOSPITAL, ETC.

THERE are many questionable theories concerning the production and elimination of uric acid. It will not be the purpose of this paper to expose their fallacy or to discuss at great length the merits of the more rational views. It will be sufficient to consider some of the well-defined clinical facts that have been forced upon the notice of the writer by the frequency with which he has encountered the condition designated lithemia.

Murchison was the first authority to clearly define and discuss that morbid condition of the blood due to functional derangement of the liver, and characterized by an excess of uric acid in the urine.

It was formerly an accepted theory that a nitrogenous diet must be strictly prohibited in the treatment of lithemic subjects. Although by certain of our British confrères this view is still maintained, there is among physicians that have devoted especial study to the subject a growing conviction that the very converse of the old theory is more nearly correct, and that the impaired metabolic power of the liver is generally due to an excessive fatty and carbohydrate diet.

The *causes* of lithemia may be briefly summarized as follows:

1. Improper food, producing acid indigestion.
2. Indulgence in beer, wine, and spirituous liquors.
3. Lack of proper air and exercise.
4. Various nervous influences.
5. Inherited dyscrasiæ.

Finally, any influence that tends to diminish the alkalescence of the blood, or that overworks the hepatic cells and arrests the complete oxidation of proteid material, may be sufficient to cause the presence of uric acid in excess or of oxalate of calcium in the urine. The mere presence of uric acid, *per se*, is no evidence that this substance is being produced in excess. It is simply thrown out of solution by a relative diminution of the alkaline bases with which the uric acid is combined. The condition must be caused by a chronic impairment of digestion before it can be strictly classed as pathological.

[1] Read before the Colorado State Medical Society, Denver, June 17, 1891.

I believe that no cause operates so constantly in producing a lithemic condition as excessive indulgence in sugars, starches, and fats. Such a diet sooner or later is apt to be followed by acid indigestion, with languor, flatulence, and constipation. In the majority of cases there will be either rheumatic or neuralgic pains, especially if there are very large deposits of uric acid and oxalate of lime. The conversion of farinaceous substances into glycogen and the emulsifying of fats is at once arrested; fermentation results, and lactic, butyric, and other abnormal acids are formed. The absorption of these acids brings about a pathological condition of the blood characterized by diminished alkalescence. This change in the blood has probably an irritating effect on the liver and brain that tends to prolong and aggravate the lithemic state.

It has been suggested by Draper that there exists a close relation between the functional disturbance of the liver in lithemia and in glycosuria. The marked nervous disturbances attendant upon lithemia would clearly indicate that the cerebro-spinal system was subjected to considerable irritation. But whether irritation of the floor of the fourth ventricle has any influence in the production of uric acid or not is a question belonging to the realm of speculation.

The habitual ingestion of beer and wine has always been recognized as a potent cause of lithemia and oxaluria. Fermented liquors are absorbed and carried to the liver in almost their full strength. When brought in contact with the hepatic cells the alcohol acts as an irritant, congestion and functional impairment result, and metabolism is retarded. Besides the deleterious influence of alcohol on the liver, wines and beers contain acids. These acids when absorbed tend directly to reduce the alkalinity of the blood and to the precipitation of uric acid. Again, copious ingestion of spirituous liquors will in time impair the digestive power, and the acid indigestion produced is a third and potent influence in the production of lithemia.

Murchison is at great pains to enumerate the admissible and inadmissible liquors, but concludes it were better to prohibit all spirituous drinks. As a compromise he would allow claret and dilute spirit. My experience has been that the allowance of any kind of liquor, however mild, is followed by relapse, and disappointment to both patient and physician. Many cases continue incorrigible because liquors are clandestinely taken and it is impossible to enforce prohibitive measures. Were any proof needed to support a generally accepted belief, the results obtained in these cases, when it is possible to secure abstinence, would be sufficiently convincing.

The following cases may illustrate the effect of alcoholic liquors both in causing and aggravating lithemia:

CASE I.—L. H., sixty years of age. When I was called to see the patient he was in a paroxysm of pain presumably due to the passage of concretions along the line of the ureters. After relieving the pain an analysis of the urine was made. It was found high-colored and intensely acid, containing large quantities of rosette crystals of uric acid. Inquiry revealed the fact that for fifteen years of his life the patient had been in the habit of taking a cocktail before breakfast, on the presumption that digestion was thereby improved. There was a history of muscular rheumatism, especially lumbago, and of periods of mental depression or nervous irritability. After putting the patient upon a diet largely nitrogenous in character and obtaining his promise to abstain from all kinds of malt and spirituous liquors, a few aids to digestion proved sufficient to entirely correct the lithemic condition.

CASE II.—J. C., twenty-eight years of age, complained of acid indigestion, languor, flatulence, and muscular rheumatism. As commonly happens in such cases, he insisted that "his kidneys were out of order" and "had fears of incipient Bright's disease." His diet was mixed and so were his drinks. He found beer, ale, whiskey, and wine equally potable, so long as the source was copious. He never went on sprees, and assured me that he was quite temperate, rarely taking more than eight or ten glasses of beer, with a glass of wine or whiskey, during the twenty-four hours. Analysis of the urine showed great quantities of calcium oxalate, uric acid and débris, with some pus-cells, leucocytes, and epithelium from vesical irritation. The patient was induced to live a more quiet, regular, and temperate life; the necessary restrictions in diet were recommended, and digestive ferments and antiseptics were exhibited to promote complete conversion of the food. The result was a speedy abolition of the symptoms of lithemia and a return to health and comfort. But the patient, from time to time, proved intolerant of restriction, and every indulgence was followed by a relapse; so that he was ultimately dismissed.

CASE III was a gentleman sent to Colorado for pulmonary hemorrhage. On consulting a physician here, he was advised to drink all the whiskey and beer his constitution would bear. After some months the patient began to develop symptoms of lithemia. Not realizing that liquors were aggravating his trouble, he continued their use for over a year, when his discomfort obliged him to seek relief.

He was advised to abstain from all stimulants. This task was no easy matter for one accustomed to copious daily stimulation. He soon became entirely free from the lumbago, lassitude, and mental depression that had made him so wretched. From time to time, however, thinking himself entirely recovered, he would relax his care in respect of drinking, and would at once have a return of oxaluria and its attendant symptoms. Later on, when for social reasons he was induced to indulge his taste even lightly for an evening, he would come to me complaining bitterly of the penalty he had to pay.

It is but fair to say that it is not common to meet with cases as sensitive to alcohol as the one last cited; yet the difference between this case and the others mentioned is only one of degree.

In male subjects, as we have seen, lithemia is often traceable to indulgence in spirituous liquors; but when this condition occurs in middle-aged and elderly women it is generally due to sedentary habits and mal-nutrition. The lack of fresh air and exercise is attended with lowered oxidation, constipation, and hepatic engorgement, thus affording favorable conditions for the formation of uric acid. No class of cases is more difficult to treat than these. The working-cells of the liver must be fed by pure blood in order to maintain their activity and fulfil their function of converting proteid material. Fresh air is required to supply pure oxygen to the vitiated blood, and exercise is necessary to send that blood briskly coursing through the portal system. Frequently the physician's ingenuity is taxed to the utmost to secure implicit obedience in regard to diet and habits of life.

The influence of nervous strain has much to do with the arrest of the normal gastric and hepatic functions. I have met with many cases in which mental anxiety was clearly responsible for chronic mal-nutrition and lowered oxidation. It is true that among such cases acid fermentation from improper diet is frequently met with; but clinical evidence is abundant in support of the view that nervous irritability is more frequently the cause of lithemia than its concomitant. It may safely be predicted that the many puzzling phenomena seen in functional disease of the liver will never be elucidated until we have a clear comprehension of the innervation of that organ and its central connection.

Inherited dyscrasia has long been recognized as an influence predisposing to lithemia and gout. It is questionable just how much derangement may be ascribed to inherited functional deficiency; but many cases present themselves for treatment in which a rheumatic, gouty, or lithemic diathesis has been apparent along the line of hereditary descent.

The question of *prognosis* in milder cases of lithemia scarcely calls for serious consideration.

If a few precautions in regard to diet, exercise, and open-air life are closely observed, the functional difficulty will correct itself. But the history of the average lithemic patient is one of oft-repeated relapses from periods of improvement. To secure happy and permanent results requires long and persistent adherence to principles of regimen and treatment. Muscular and articular rheumatism, nervous irritability, insomnia, and mild melancholia, the sequelæ of lithemia, make it a disease of no trifling significance. A few resist all ordinary means of treat-

ment, and in such cases we must exert constant vigilance to arrest the onward progress toward gout or calculus. No pronounced precipitation of uric acid or oxalate of calcium can occur for an indefinite time without setting up catarrhal inflammation in the renal pelvis or bladder. When once this catarrh becomes excessive, vesical calculus will result from decomposition of the urine and phosphatic incrustations.

Briefly stated, the *treatment* of lithemia consists in the removal of its causes, affording the liver an opportunity to accomplish its metabolic function unimpeded; but the successful management of this disease involves strict adherence to detail.

Attention to diet is of paramount importance. Discriminating care is necessary in the choice of food easy of digestion and least liable to fermentative decomposition. Starches, fats, and sugars stand first on the list of foods to be avoided. Potatoes, corn, rice, radishes, cabbage, and fibrous vegetables are inadmissible in the average case of lithemia. In severe cases fruits, and even bread, may have to be limited. Highly acid fruits, such as strawberries, blackberries, oranges, and occasionally apples, are arrested in digestion, and the liver is irritated by the products of decomposition.

Fat, in the form of lard or oil, proves exceptionally pernicious; even butter must be limited in quantity. It should be emphasized that no food for the lithemic subject should be fried or prepared by the aid of any fat.

All sweets, whether in the form of sugars, syrup, candies, or pastries, are especially liable to early fermentation. Sugars in excess overload the hepatic cells and impair the glycogenic power of the liver, arresting the complete conversion of nitrogenous products. It is not at all uncommon for a patient suffering from lithemia to appear asking treatment for acid dyspepsia, pyrosis, flatulence, and lumbago, with the statement that "all he has been able to eat with any zest is pancakes and maple syrup." Would it be possible, in the whole category of dietetics, to select a combination of substances more potent in the production of fermentation and dyspepsia?

It should be understood that the foods mentioned in the foregoing list may be considered allowable only upon careful consideration of the case in hand. No empirical statement can be laid down that will apply *in toto* to every case.

Among the foods that may be allowed the lithemic subject are eggs, broiled meats, fish, oysters, game, and tender fresh vegetables. Milk, cocoa, and abundance of pure water should be taken as drinks; but at no time should any amount of liquid be taken with solid food at meals. Few influences operate more harmfully in the production of acid dyspepsia than the common habit of drinking freely at meals. The gastric juice is thus diluted and rendered powerless to attack the solid ingesta. The free use of water an hour before or two hours after meals contributes greatly to the relief of a torpid liver, and flushes out the kidneys in a simple but effective way not accomplished by any other means.

It is important that the quantity as well as the quality of food should receive attention. The gastric and hepatic functions are often impaired by over-feeding, when a smaller amount of ingesta would be easily appropriated.

Finally, it will be necessary to prohibit every form of alcoholic stimulants. I have never known a case of lithemia that did not suffer immediate relapse on the return to alcoholic drinks, even in small quantities. No exception can be made to the rule of exclusion, unless it might be light claret or gin, and both of these liquors have so often deceived me that I have lost confidence in the authority that has allowed even this concession.

Next to care in diet, systematic outdoor exercise and open-air recreation figure in importance in the permanent cure of lithemia. Several months in the woods or at the seashore often prove most effective in obstinate cases. No exercise should be engaged in so violently as to rob the centers of oxidation of their required amount of blood. Exercise carried to exhaustion is more harmful than a sedentary life.

In most cases of lithemia it will be found necessary to employ some aid to digestion to insure the complete conversion of food.

The administration of nux vomica, bismuth, and soda before meals, and pure pepsin with dilute nitro-hydrochloric acid after meals, will, in the majority of cases, prove sufficient. Nitro-hydrochloric acid may do more harm than good when exhibited in cases in which there is an excessive amount of native acid in the stomach, or where for any reason it passes rapidly into the circulation, thereby reducing the alkalescence of the blood. As an oxidizing agent experience shows it has no superior, and it is supposed to have a special action on the liver.

Alkalies are often administered to correct a lithemic condition, but their excessive use is erroneous. The continued administration of alkaline salts usually lowers the gastric tone to such a degree as to set up the very conditions that induce lithemia.

Sodium phosphate proves a valuable saline in cases in which the liver is primarily at fault.

Chloride of ammonium acts happily when there is continued engorgement of the portal circulation.

Salicylate of sodium has been highly spoken of by certain German authorities, but its unhappy influence on a stomach already weakened by irritants makes it a doubtful drug in lithemia.

Perhaps no medicinal agents act more satisfactorily in stimulating the liver than the various saline

waters, such as those of Vichy, Ems, Buffalo Lithia, and our own Manitou. In the majority of instances the chief benefit derived is from the thorough washing out of the débris of oxidation from the system. The chemical influence is largely of secondary importance.

Experiments have shown that in many cases equally good results have been obtained from drinking copiously of simple water. All mineral waters act best when taken warm, and while fasting. In chronic lithemic subjects, when the formation of stone in the bladder is to be apprehended, the continued use of selected mineral waters as a prophylactic is excellent practice.

A CASE OF PRIMARY LUPUS OF THE PHARYNX.

BY JONATHAN WRIGHT, M.D.,
OF BROOKLYN, N. Y.

THE recent flurry among the miracle-seeking members of our profession, caused by Koch's premature announcement, has been at least productive of the publication of records of cases of lupus.

For a number of years it was thought that lupus of the mucous membrane of the nose and mouth was always an extension, by continuity or contiguity, of a similar growth on the skin. In the last seven or eight years, however, reports of carefully studied cases have made it probable that a very large proportion (from 20 to 45 per cent.) of all cases of facial lupus really begin in the contiguous mucous membranes.[1] The painless character of the growth is an explanation of this former oversight on the part of clinical observers. Fifteen years ago, Von Ziemssen[2] rightly prophesied, and the prophecy was echoed by Lefferts,[3] that a more careful search would reveal many cases of lupus of the throat. Lennox Browne[4] has lately said that in a skin hospital he saw in a few weeks more cases of lupus of the nose and throat than he had previously seen in a throat-practice of twenty years. For a number of years nearly all the standard works and monographs have referred to the case mentioned by Von Ziemssen in 1876 as the only one reported in which the disease was primary and confined to the larynx. This statement is certainly erroneous, since Haslund,[5] in 1883, reported a case of lupus confined to the larynx, while Obertüschen[6] recorded a case in which the lupus first appeared in the larynx of an otherwise perfectly healthy individual; a year and a half later skin-lupus appeared on the nose, the laryngeal lesion having healed. Others more or less doubtful have been reported. Primary lupus of the tongue, though almost as rare as that of the larynx, has been observed by Fairlie Clarke[1] and Leloir.[2] Primary lupus of the soft palate and pharynx is more common, while the nasal mucous membrane is very frequently the starting-place of facial lupus. Of course, many of these cases are open to justifiable doubt in regard to the diagnosis; but in the light of the more recent publications of clinical experience one should hardly be satisfied with the declaration of Lefferts (*loc. cit.*), Störk,[3] and others, that they would decline to make a diagnosis of lupus of the throat without coëxisting skin-lupus. Such isolated disease, as stated above, is by no means rare, Chiari and Riehl,[4] as long ago as 1883, having reported thirty-eight cases of lupus of the larynx. Many more have been reported since.

The following case of primary lupus of the pharynx is, however, the only one that has ever come under my observation. It must be remembered that lupus is one of the diseases that is, judging from literature, much more common in Europe than in this country.

F. F., male, seventeen years of age, an iron-worker, of German parentage, came to the Demilt Dispensary in May, 1890, because his mother, on looking into his throat, had discovered its abnormal appearance. There was no record of hereditary tuberculosis, cancer, or syphilis. The patient himself gave no direct or indirect history of acquired syphilis. About six months previously he began to notice that his throat was dry, his nose was stopped, he breathed through his mouth, and a tickling in his throat made him cough a little. He was slightly deaf on the left side. Three or four months ago he had some lumps removed from the left side of his neck. It was impossible to ascertain whether the appearance of the lumps followed or preceded the throat symptoms, which were exceedingly slight, there being no dysphagia and but little discomfort.

The boy's appetite and general health were good. His appearance was robust; with the exception of the scar at the angle of the jaw on the left side, where enlarged glands could still be indefinitely felt, he presented no external evidence of tuberculous disease. There was no skin-lupus. A physical examination of the chest revealed nothing abnormal. The fauces were seen to be thickened and covered with numerous tiny, shining elevations of the sur face. There was some congestion, but no ulceration. The thickening was more marked on the left side. The uvula was enormously hypertrophied, being nearly as large as the distal phalanx of the middle finger. It also was sprinkled with little surface elevations, and near the tip this appearance was exaggerated to such a degree as to be called fungous.

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[1] Vide Bender's convincing articles, Vierteljahresschrift für Derm. und Syph., 1888, 15, p. 892, et alidem.
[2] Amer. transl. Encycl., 1876, vol. v, p. 852.
[3] Amer. Journ. Med. Sciences, April, 1878, vol. lxxv.
[4] Diseases of the Throat, 3d ed., p. 426.
[5] Vierteljahressch. für Derm. und Syph., 1883, 10, p. 471.
[6] Centralblatt für klin. Med., 1883, No. 38, p. 609.

[1] Trans. London Path. Soc., 1876, No. 27, p. 148.
[2] Annales de Dermatol. et de Syph., 2d series, 1889, 10, p. 849.
[3] Krankheiten des Kehlkopfes, 1880, p. 362.
[4] Vierteljahresschrift für Derm. und Syph., 9, 182, p. 661.

There was some reddening around the edges of the infiltrated area on the soft palate, but the tubercles themselves were pale and shining. There was very little secretion. There was some linear cicatricial tissue on the posterior pharyngeal wall. There was no pain on swallowing, or on manipulation. The patient complained only of a clogged feeling in the throat. There was some hypertrophy of the nasal mucous membrane, and some deviation of the septum to the left. It was thought that on the right side a few shining points could be seen on the inferior turbinated bone far back, but at that time this was not satisfactorily established.

After exclusion of syphilis by a thorough but fruitless course of potassium iodide and mercury, the diagnosis of lupus was made. With the cold snare the whole uvula was amputated as close to the velum as possible. Vigorous applications of pure lactic acid were made. The infiltration seemed to subside somewhat, and the patient being relieved of the symptoms that annoyed him, ceased to attend.

A microscopic examination of the excised uvula proved conclusively that we had to deal with a tuberculous growth, notwithstanding that it was impossible to demonstrate the presence of the tubercle-bacillus in the ten or fifteen sections stained for it.

Gottstein,[1] in his excellent work, gives a good description of the microscopic appearances in a case of lupus of the uvula, and a reference to his account will give an almost exact picture of my case. Sections were submitted independently to several experienced microscopists, who all agreed as to their tuberculous nature. Several laryngologists saw the case, and the diagnosis of lupus was undisputed.[2]

On the arrival in New York of Koch's fluid—tuberculin—the patient was hunted up and induced to place himself under treatment. Before the inoculations I find in my history-book the following note:

"At the base of the amputated uvula on the anterior inferior edge of the soft palate, there is a rosette of small pin-head, pale, shining tubercles. Here and there a few may be seen along the arch of the soft palate and on the anterior pillar on the left side. The latter is fast to the tonsil, which is hypertrophied. On the posterior pillar on the right side there is a suspicious-looking spot. The epiglottis is thickened, but it is impossible to determine the presence of the little tubercles seen elsewhere; otherwise the larynx is normal in appearance. The patient having had some nose-bleed from the left side, careful examination reveals a little patch of tiny tubercles about the middle of the convex surface of both the middle and inferior turbinated bones on that side. No true ulceration and no destruction of tissue, no breaking down of the epithelium, can be discovered anywhere in the nose or throat."

The patient at that time (December 23d) was shown at the laryngological section of the Academy of Medicine. On December 24, 1890, the patient received his first inoculation with 0.001 of tuberculin, followed at the usual intervals by two or three others. The reaction was characteristic, the fever reaching 101° F., with malaise, etc. The little tubercles that before had been pale-red and shining became white at their centers and looked as if they would soon break down. This, of course, made them much more noticeable, but I am unable to say whether, as Virchow has claimed, new ones were formed, or whether the previously-existing but unnoticeable ones were accentuated and made more evident. There was, of course, a great increase in the congestion; the reddened areola was very marked, and the patient complained of his throat being sore.

He had evidently satisfied himself concerning the effect of the tuberculin and escaped from the hospital. All subsequent attempts to induce him to return were of no avail. In the light of our present experience the folly of his conduct will not appear so glaring as it then did.

The differential diagnosis of syphilis, lupus, and tuberculosis of the mucous membranes—"the three grand processes," as some Frenchman calls them—often presents insurmountable difficulties, even to the most trained and experienced observer, yet typical cases of each are unhesitatingly recognized by the clinician, so unmistakable are their characteristics. The majority of writers claim that there are more cases on the diagnostic border-line between syphilis and lupus than on that between tuberculosis and lupus. I have seen one case of syphilis in which, on the aryteno-epiglottic fold, there was an appearance almost identical with that described in the case here reported—the same absence of ulceration, the same shining, tiny tubercles. Other manifestations, however, and the result of treatment proved the specific nature of the case.

Clinically, tuberculosis of the throat is a painful, ulcerating, non-cicatrizing affection, almost always combined with visceral tuberculosis, and accompanied by signs of systemic enfeeblement and marked decline of the general health. Lupus, on the contrary, is comparatively painless, does not always tend to the formation of true ulcers, and as it advances leaves cicatricial tissue behind it. As a rule, the general health is not affected. It is a matter of dispute whether there is any great preponderance of visceral tuberculosis among its victims, though the weight of evidence, at least in a slight degree, affirms the fact. In considering this question, however, it is always well to remember that about one-third of *all* autopsies show the presence of active or latent tuberculosis, or the evidence of

[1] Krankheiten des Kehlkopfes, 3d ed., p. 277.

[2] I have also in my possession sections of several specimens of syphilitic disease of the uvula and soft palate, and the contrast between the two forms of inflammation in this locality is striking and interesting.

previous tuberculosis. Moreover, although lupus may be followed by tuberculosis in one-half of the instances, it has never been shown that lupus is any more liable to attack the skin or mucous membranes of a consumptive than to attack those of a healthy person.

The writer does not wish to insist on the non-identity of lupus and tuberculosis. He wishes, however, to insist on the Scotch verdict—"not proven." Clinically, we all know the difference in the pictures summoned to the mind of the laryngologist by the words "lupus" and "tuberculosis." The order of frequency of the occurrence of tuberculosis in the air-passages—and it is of this locality only that the writer pretends to speak—is lungs, larynx, pharynx, nose; while of lupus, it is nose, pharynx, larynx—and lungs never (?).

Histologically, we know how trifling is the difference. The greater vascularity and the fewer areas of coagulation-necrosis, the fewer giant-cells in lupus, are merely matters of degree. The difference in the number of bacilli found in the two processes is, however, too striking not to be significant. In Dr. Rice's recent admirable article[1] on lupus of the throat, there is one point that arrests the attention of any one conversant with the subject, and that is the finding of a considerable number of bacilli in the secretions from the lupus-patch on the face. Through his courtesy I had the privilege of seeing his case, in which the throat lesion differed from that in my case only in the stage of the process and in the location.

The difficulty of demonstrating the tubercle-bacilli in the lupus-tissue is great, it being necessary, usually, to stain many sections before even one bacillus can be made sure of. While I have made no *exhaustive* search for the fact, I have been unable to find in very extensive references *any* record of the bacillus tuberculosis having been found in the secretions of true lupus.[2] L. V. Krynski,[3] however, described a case of facial lupus in the discharges of which he could, as usual, find no tubercle-bacilli; after the first injection of tuberculin, none; after the second, two; after the third injection, countless numbers. After later injections, none were found, except after the fifth, when two were noted. Dr. Rice's paper does not record the relation of the bacterial examination to the time of inoculation.

In the early days of bacteriology the new school had its strongest claim to the belief and confidence of the medical world in the irrefutability of the evidence it presented. Presumptive evidence was ruled out with scorn. We are now asked to accept the tubercle-bacillus as the chief, if not the sole factor in the etiology of lupus. No one has ever produced, no one has ever claimed to be able to produce lupus by inoculation of the tubercle-bacillus. Tuberculosis is frequently, but not constantly, produced by the inoculation of lupus material; lupus itself has never been reproduced by inoculation. Thus we see that the bacteriological evidence of the identity of the etiology of the two processes is far from satisfactory. We can only suspect that lupus is a variation of tuberculosis. If it should ever be *proved* to be, the term lupus must still be used to indicate a distinct clinical condition.

To ask the observer of diseases of the throat to believe that the two processes are identical in their etiology, is to ask him to lay aside the use of his reason and to disregard the evidence of his senses. He may, however, be disposed to admit the probability of the identity of certain factors in the etiology of each, for disease is not a plant, nor is it an abnormal agglomeration of cells in a certain constant order of arrangement; it is "a derangement of any of the vital functions" (Webster). Pathological changes are the results of disease, not the disease itself.

It is perfectly within the range of possibilities, and it is daily becoming more probable, that the same microörganism may cause more diseases than one. It is perfectly certain that we hardly have a disease known to man that is due to any one cause. It is natural for man to seek a simplicity of relation between cause and effect. Such simplicity does not exist between the manifestations, the lesions, and the etiology of disease. Classification of disease is the means, not the end, of its study; and at present no classification is possible that is satisfactory, and it is futile for medical men to try to drag certain clinical manifestations of disease into line with the minute pathological changes with which they are associated. Systems and rules are the crutches with which the medical novice learns to walk, but the sooner he throws them aside when he is on his feet, the less he is encumbered.

[1] New York Med. Record, April 18, 1891.

[2] For an excellent review of this subject, covering in a general way the whole ground, vide Rev. des Sciences Médicales, Avril 15, 1891, No. 74, p. 669.

[3] Deutsche med. Wochenschr., Mai 28, 1891, p. 745.

PHARYNGO-MYCOSIS.[1]

BY HENRY BIXBY HEMENWAY, A.M., M.D.,
OF EVANSTON, ILL.

PHARYNGO-MYCOSIS is often a very annoying trouble for the general practitioner, by whom it is generally confused with other troubles, especially with follicular pharyngitis. The mild nature of the disorder does not compel a close examination, and even specialists are frequently ignorant of its nature.

[1] Abstract of paper read before the Chicago Medical Society, December 7, 1891.

There is reason, however, for believing that it is far more common than is generally believed. Most cases are treated by general practitioners.

There are many forms of pharyngo-mycosis. That due to the growth of the oïdium albicans (which has been more recently identified with the mycoderma vini and saccharomyces albicans) has long been known, and generally resides in the mouth. Nigrities linguæ resides especially on the tongue, and it is probable that when sarcinæ are found in the pharynx they are the secondary result of a like growth in the stomach. Other cases of mycosis in the pharynx have been ascribed to the growth of aspergillus fumigatus, actinomyces, leptothrix buccalis, and bacillus fasciculatus. It is more especially to the last two forms mentioned that this article applies.

But few references are found in literature to the subject. A careful search failed to discover more than four articles in American medical journals. Most articles upon the subject have appeared in the French and German journals. England has added almost nothing to our knowledge, and most textbooks are silent upon the subject. This is especially remarkable when we remember that the first article on the subject was published in 1873, and that the affection is extremely difficult of treatment, except by surgical means.

The etiology of pharyngo-mycosis is very uncertain. Catarrhal inflammation is a predisposing cause. Mouth-breathing brings the air in direct contact with the tonsils, and favors the implantation of the microphyte. Hypertrophied tonsils favor its development. Damp, unhealthy surroundings are predisposing causes. It is more common in females than in males. It has been found in the vicinity of diphtheria. The form of the bacillus suggests that it is perhaps closely related to forms found in stagnant water. Lennox Browne mentions unhealthy skin as a cause. Dental caries is also mentioned as a cause, favoring the development of leptothrix.

Pharyngo-mycosis is essentially a chronic affection, subject to exacerbations and abatements when left to itself. The subjective symptoms vary from a very slight tickling sensation to a decided feeling of obstruction. Sometimes nothing is felt. At other times the local irritation produces a local inflammation, accompanied by the usual symptoms of tonsillitis or pharyngitis, such as pain and fever. The irritation of the fungus frequently causes a hacking cough, sometimes accompanied with vomiting. The voice is sometimes altered. If constitutional symptoms are present they are secondary. Asthma is sometimes present.

Objectively we see spots upon the pharyngeal wall or around the circumvallate papillæ of the tongue that vary in color from white to cream or yellow. When circumscribed upon the tonsils they are seen to grow from the crypts. They are very tenacious, not easily broken off, and when removed they are rapidly reproduced in the same locality, sometimes within twenty-four hours. The growth is generally in the form of filaments or tufts; sometimes it is confluent in the form of a membrane. Normally the mucous membrane around the fungus is natural in color.

Mycosis is differentiated from diphtheria by its chronic nature; by less tendency for the fungus to spread; by absence of fever and symptoms of systemic disturbance (except when accompanied by tonsillitis); by absence of the diphtheritic odor; by absence of pain, and by the form of the fungus. When in the membranoid form, it does not come off as a membrane, but breaks in pieces. When removed it sometimes leaves bleeding-spots, but the mucous membrane is not so much denuded as in diphtheria.

In follicular pharyngitis the contents of the follicles are easily expressed. The calcareous concretions sometimes found in chronic follicular amygdalitis often project from the crypts, but they are also easily expressed. Though in follicular inflammations the accumulations frequently *contain* leptothrix threads, they are not *composed* of the filaments.

The filaments of pharyngo-mycosis are easily seen, often without staining, with an amplification of 600 diameters. They are brought clearly to view with an aqueous solution of methyl-blue. Anilin-red, or an aqueous solution of potasium iodide and iodine, also stain well. In the specimens examined by the writer, the filaments were arranged in bundles or fascicles, which sometimes branched, though the filaments themselves did not branch. In other cases the filaments were not in bundles, though lying parallel; sometimes they were arranged in the form of a network. The filaments are generally found more or less intermixed with fine granular matter, which is frequently arranged in lines from which the bacilli generally project at an obtuse angle. The filaments or bacilli are normally straight, or nearly so, though they may be found flexed almost into the form of an ellipse.

The writer was unable to find a description of Sadebeck's bacillus fasciculatus, but since he found the bacillus so frequently in fascicles he regarded his specimens as of that species. He frequently found the leptothrix filaments, but the constant form was not leptothrix. Leptothrix buccalis filaments are from 0.7 to 1 μ broad, and the cells measured by the writer were seldom over 3 μ long. The bacillus of mycosis, however, varied in thickness from 0.4 to 0.56 μ, generally about 5 μ long, but sometimes 16 μ in length. The bacilli do not show a tendency

to form long threads, as seen in the leptothrix. There are reasons for suspecting that the bacilli have some power of locomotion.

A large majority of observers have seemed to agree that leptothrix is the cause of pharyngo-mycosis. So far, however, as found by the writer, their descriptions are not those of leptothrix. Leptothrix is common, especially upon the gums; but mycosis is rare, and not found on the gums. It would be strange if leptothrix were not frequently found with mycosis, but its presence does not prove that the growth is the result of leptothrix.

Prognosis. The affection is generally more troublesome than dangerous. The fungus is slowly destructive of the tissues on which it grows. It may be implanted on the Schneiderian membrane or lodged in the lungs. In the latter location it might prove serious. Spontaneous cures sometimes occur. In other cases the disease is extremely chronic. No treatment is satisfactory except the use of the galvano-cautery. With few exceptions, and those doubtful, drugs have been absolutely useless. The bacilli penetrate deeply into the tissues, and the treatment must be correspondingly energetic. Since they seem to thrive best in an acid medium, the writer recommends the application of the negative electrode, with a large external positive electrode.

This paper is based upon a case that the writer observed for five months, and which had been called one of follicular pharyngitis. Antiseptics, caustics and pepsin were all unable to destroy the microphyte. Nothing was heard from the patient after the removal of the growth by the galvano-cautery.

THE AMEBA COLI.

BY JOHN H. RHEIN, M D.,
OF PHILADELPHIA.

As the relation between the ameba coli and dysentery is yet a matter of doubt, the following observations may be added to the accumulating testimony on the subject.

The question grows more complex when it is considered that the ameba has been found in the stools of children with catarrhal diarrhea, in the urine of phthisical patients, and in the pus of abscesses of the liver; while in a recent epidemic of dysentery in the Norristown Insane Asylum, careful examination of the stools failed to find in any case the ameba coli.

The theories as to the nature of this organism that make it an intestinal epithelial cell or an especially well-nourished leucocyte have thus far scarcely been maintained.

In a series of fifteen cases of dysentery that have come under my observation amid the same climatic and hygienic conditions, the ameba was readily found in the stools of all. The examinations were made with the aid of one-twelfth oil-immersion and one-fifth lenses.

The organisms varied in size from two to several times that of the white blood-corpuscles, and contained one or more vacuoles and some amorphous granular matter. Their outline was faint and indistinct, so that at first the organism was not easily distinguished.

When at rest the organisms appeared circular, or nearly so, unless they had died in the act of protruding a pseudopod, an event of not infrequent occurrence.

The vacuole varied in size. In some amebæ it was found to be small, in others so large as to occupy the greater part of the organism. (Fig. II, *b.*)

There was no constancy in the amount of granular matter, as indicated in the accompanying illustrations. When small in quantity it was found aggregated at the periphery of the ameba; if the amount was large, it occupied the entire organism, together with the vacuole. The motion was relatively slow or rapid, and included a slow, irregular movement of the whole ameba, a wave-like movement of the contour, and a dancing of the granular matter.

Fig. I represents the changes in two amebæ that took place in the course of a few minutes, the stool having been examined an hour after its evacuation. It is to be noticed that the granular matter changed position with each wave-like motion, the wave beginning at one side of the body and ending at the other in the extrusion of a pseudopod, each movement occupying about three-quarters of a second. These were rhythmically repeated a number of times. (Fig. I, B.)

The movements, when slow, seemed to be associated with an entire change in the shape of the organism, and in two cases there appeared to be a cycle of motion. The original shape being circular, or nearly so, there followed a variety of forms, so that finally the original shape was resumed. (Fig. I, A.)

The change in position occasioned by the currents in the fluid of the specimen examined must not be mistaken (as it may easily be) for this movement.

The motion seen in the granular matter was very rapid, and consisted of a dancing of the small particles, which soon established a current around the vacuole, so that the granules were carried around in the current, making repeated excursions. In one instance, though the observation was continued for a long time, no change in the contour of the ameba was discovered.

The pseudopods resembled small corpuscles attached to the ameba, and when, as is often the

case, the granular matter extends to the base of a pseudopod, there is an appearance of two distinct bodies. (Fig. II, *a*.) The pseudopods varied in number, there being usually only one or two, but, as was once seen, there were five. (Fig. II, *c*.)

Fig. I

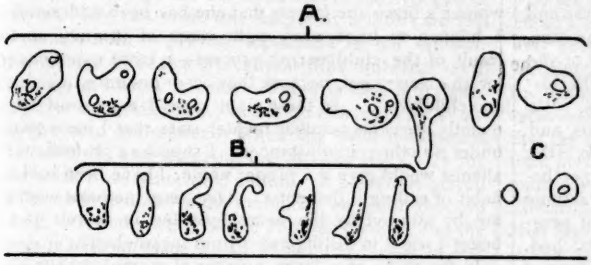
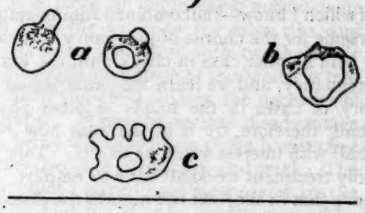


Fig. II.



In a few cases the ameba appeared to be motionless, though every precaution was taken to preserve life, and the observations were carefully made. There was some difficulty in preserving the vitality of the ameba sufficiently long to observe its movements, and it became necessary to use means to keep the stools at the body-heat, to use warmed slides and cover-glasses, or a warm stage. Even when these precautions were taken the organisms continued to live only for from ten minutes to two hours.

An attempt was made to stimulate the amebæ to movement after they had apparently died, and in one case five pseudopods were protruded, while in others some slight motion was occasioned, but the results were by no means constant. In two cases the cercomonas intestinalis was discovered in very active motion.

ORIGINAL LECTURE.

CHOREA IN PREGNANCY—PUERPERAL INSANITY—THE CARE OF THE UMBILICAL CORD—MAMMARY BINDERS—RECTO-VULVAR FISTULA—MAMMARY ACTIVITY AND MENSTRUATION IN THE NEWBORN—LUMBO-SACRAL KYPHOSIS, ETC. ETC.

BY BARTON COOKE HIRST, M.D.,
OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, AND PROFESSOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA.

CHOREA IN PREGNANCY.

OUR first patient has, to a slight degree, the chorea of pregnancy. You observe the twitching of the right shoulder, of the head, and of the neck, as she sits before you. I question her about her condition, and her embarrassment, you see, increases; she squirms about on her chair, so that the choreic movements are somewhat masked, but you may still perceive them. The case is one of mild chorea in pregnancy. Even in this form it is a rare disease of pregnancy—I have seen but three cases.

In reply to my question, the woman tells me that for two years past she has had St. Vitus's dance, but not to such a degree as at present; that she had a bad attack of rheumatism three years ago, and that she knows nothing of her family history. These three points are always of interest in the study of the chorea of pregnancy. Heredity, preëxisting chorea, usually in childhood, and rheumatism are the three main etiological factors. The two other cases that I have seen were very much more marked than this. In both I was obliged to interrupt pregnancy late in its course. It should be remembered that there are two grades of chorea in pregnancy: one a mild, the other a severe and malignant disease in which the mortality is over 30 per cent. The mild cases, however, may grow progressively worse, and become malignant, so that whenever chorea occurs in pregnancy the woman must be carefully watched, in order that gestation may be interrupted in time, if the movements become so violent as to threaten exhaustion. In my first case of chorea in pregnancy, I managed to control the disease and even to diminish it until the last weeks of pregnancy, when, in spite of treatment, the movements became rapidly more constant and violent, and I induced labor. In the first few days of the puerperal state the chorea disappeared. This case had a very interesting history. As a child the girl had had chorea, but had been cured by competent medical attendance at that time. Three or four days after the illicit intercourse that resulted in impregnation the chorea reappeared. The other case that I have seen was in a girl who was at the same time insane, the chorea, however, by a few months antedating the insanity. She, too, had been illegitimately impregnated, but was afterward married to the father of her child, who then deserted her. This girl came of a neurotic family. She developed a type of insanity that I shall exhibit to you later in to-day's lecture. In her case I also interrupted pregnancy, not entirely on account of the chorea, but partly because she had a high grade of generally-contracted pelvis, and pyelitis also, so that, taking everything into consideration, I thought she would be better off if the pregnancy were terminated as soon as the viability of the child could be pretty well assured. Consequently, I induced labor about five weeks before term. The child did well, and the mother made a complete recovery. I accomplished a cure in her case,

I believe, by improving the condition of her blood. As in a large number of insanities in the childbearing woman, I found in her a very marked anemia. Under the prolonged use of iron and arsenic I increased the number of red blood-corpuscles from less than 3,000,000 to more than 5,000,000 in the cubic millimeter, and as the blood approached the normal the girl rather suddenly recovered her reason, the chorea having disappeared long before. This is the best medicinal treatment of which I know—the combined administration of iron and arsenic for the chorea of pregnancy. It cured one case, it held another case in check until the latter part of the pregnancy, and we learn the same lesson from the history of cases in the hands of other physicians. We shall, therefore, try it in the case now before us, and shall with interest watch its effects. This, I think, is the only treatment we shall have to employ. I do not believe that in the next two months the disease will assume so serious a nature as to demand interruption of pregnancy. The patient will, however, be carefully watched. I have, myself, never seen the truly malignant type of chorea in the pregnant woman, although one of my cases nearly approached it. Dr. Goodell, however, as you may perhaps remember, has seen a remarkable instance of this sort, and in his inimitable manner has described it. The woman in labor jerked and contorted her limbs and body with such violence that she spattered the walls of the room with her blood as high as a man's head, although she was delivered on a mattress upon the floor. She afterward died of exhaustion. That was a typical case of malignant chorea—a condition that, whenever possible, must be guarded against by the timely interruption of pregnancy.

PUERPERAL INSANITY.

The next patient has puerperal insanity—in connection with the study of chorea an interesting condition, because the two are sometimes associated. This woman is married, about thirty-seven years of age, has had four children, the last about a month ago. After the birth of the child before the last she was irritable, and at one time violent. Her family did not think her insane, however, and she remained at home, and after some weeks she recovered her normal state of mind. During the last three weeks her husband has had no work, and has pawned the household goods, one article after another, to obtain money for drink. The woman left her bed at the ordinary time and busied herself with her housework, according to the statements of her family manifesting no unusual mental symptoms, except "fits of temper," until a few days ago, when she began to have delusions and became violent. When she first entered the hospital it was not easy to detect the mental disorder, although the next day her insanity was very apparent. She started for the window, saying she wanted to go home, and was just prevented from jumping out. As you can see from her appearance, the woman's physical condition is bad. Her breasts furnish little nourishment for the child, which must therefore be fed artificially. As I now ask the patient a number of questions about herself and her family, you hear that her answers are clear and rational. It takes a close and continued observation of this woman to show her true condition. The only thing abnormal I notice now is the slowness with which she appears to understand my questions. There is a mental apathy or lethargy that, in a more pronounced degree, I have often seen in the insanities of the childbearing woman. There is in these cases a complete indifference to surrounding conditions and events. The lethargy is profound. One is reminded of the poetical picture of the lotus-eater. The slowness of perception is so great that, when one asks a question, before the purport of it has reached the woman's brain she forgets that she has been addressed. I happen to have seen eight cases of insanity as a result of the childbearing process—a large experience for an obstetrician, because they occur but once in about 400 childbirths. In these eight cases I have most frequently seen this peculiar mental state that I have seen under no other circumstances. I suppose a professional alienist would give it a proper name; I have been in the habit of calling it dementia. That term perhaps would not be allowed by the neurologist, but in default of a better I use it to distinguish it from melancholia.

In the study of a large number of women insane as the result of childbirth, it has been found that the maniacal type is the most common. But this conclusion is based mainly on the statistics of insane-asylums, to which maniacal cases are almost sure to go, while melancholic and demented women would more likely be kept at home. In my own experience, relatively small of course, I have seen mania in but 25 per cent. of the cases.

It is always interesting in these cases to investigate the causes, for there is almost always one to be found, and some of them should teach the physician a useful lesson. Dr. Fordyce Barker saw thirteen cases of obstetrical insanity in physicians' wives that he attributed mainly to the dread of parturition inspired by reading their husbands' books on midwifery. In one of my cases in hospital practice a violent mania broke out directly after the woman was informed by the resident physician, two weeks after labor, that the perineum was torn and must be stitched. I think there must be a predisposition to nervous break-down in individuals that develop insanity from comparatively slight causes. The lesson to be learned from such cases is to guard women of this character as far as possible from nervous shocks and strains, especially during pregnancy, recollecting that gestation adds immensely to the irritability and impressionability of the nervous system. In the majority of my cases the women were illegitimately impregnated, and brooded over their disgrace till they became insane, in two instances exhibiting a religious melancholia. In two cases the women were deserted by the men that married them. In another, the woman had lost an older child from diphtheria. There is always some exciting cause to be discovered. Fortunately, the prognosis of the disease is good. The women recover their reason in about two-thirds of the cases, and the death-rate is low. The fatal results are generally due to the sepsis that so often accompanies insanity after labor that it must be regarded as a cause, or less frequently as the result, of maniacal exhaustion.

THE CARE OF THE UMBILICAL CORD.

I wish next to give you a demonstration of the way to take care of the umbilical cord in a newly-born infant. Carelessness in this particular has brought about very

bad results. I myself have made five post-mortem examinations of infants dying from septicemia resulting from such carelessness. The old plan was to surround the cord with a greasy, very often dirty, rag, and to leave the dressing undisturbed till the cord had dropped off. As a result, the cord would undergo a process of putrefaction or moist gangrene, with the constant danger that poisonous germs might be swept into the general circulation through the umbilical vein or the hypogastric arteries. We can avoid this danger by a little care, just as we are able to prevent septicemia in our obstetric operations. Here is a typically healthy umbilical cord. It is dry, and black in color. There is here a dry gangrene, or mummification; we secure this result by dressing the cord antiseptically when the child is cleansed after its birth, and changing the dressing daily. In my own work I use salicylated cotton. A pledget is placed on the abdomen above the umbilicus, on which the cord is laid. Over the cord is laid another pledget, and the whole is held in place by an abdominal binder of soft flannel. Should there be some little putrefaction in spite of these precautions, we can neutralize its effects by dusting the cord with an antiseptic powder, the best being starch and salicylic acid, five parts to one. It is not usually realized by the general practitioner that septicemia in the newly-born baby is common. In fact, to the general practitioner the whole pathology of early infancy is often most obscure. If the child dies in the first week or two, a death-certificate is given with marasmus or inanition as the cause of death—indefinite terms that cover a vast multitude of interesting conditions.

MAMMARY BINDERS.

I have next to demonstrate to you a matter seemingly trivial, but in truth of considerable importance. It is a very common thing to see an exaggerated engorgement of the mammary glands when milk-secretion is first established. The consequent distention and swelling of the breasts gives the woman pain and exposes her to the danger of mammary inflammation, and possibly of suppuration. In this connection it is interesting to recall the steps by which we have reached our present knowledge of the formation of mammary abscesses. It was formerly thought that mammary abscesses came from "a caked breast." But when the bacteriologist demonstrated the true pathology of wound-infection there arose an ever-increasing class of physicians that believed mammary abscesses to be the result of an infected nipple. Later investigations, however, have shown that there was a good deal of truth in the old idea. There *is* a mammary abscess that results from the invasion of the glands by staphylococci from the deeper lactiferous ducts. For this to occur, however, it is necessary that the resisting power of the cells in this situation should be much reduced, and it is the great engorgement of the glands with blood and milk that thus paves the way for infection. There are two causes of mammary abscesses: the first, an infection of cracks and fissures in the nipple; the second, a reduction of the vitality of the epithelial cells deep within the breast, and their subsequent invasion by staphylococci. It is the old story of the gold and silver shield over again, to which we find so many analogies in medical disputes. A mammary abscess is, therefore, to be avoided by preventing fissures in the nipples, or by keeping these clean should they develop, and by preventing too great engorgement of the glands. The latter object is attained by the use of a mammary binder, and by the frequent evacuation of the breasts. On three successive patients I propose to show you some of the mammary binders that are in common use. I first exhibit one that I must unreservedly condemn. In this institution, however, it has obtained a firm hold. You see that it is a piece of unbleached muslin, wide enough to reach from the axillæ to the false ribs, and long enough to surround the chest, with two holes for the nipples. The single advantage of this binder is that the woman can nurse the child without the necessity of removing the binder. It has the serious disadvantage that the nipples, being the only parts of the breasts free from pressure, swell, become edematous, and crack. The mammary binders that I have found most useful are the Richardson binder, and the Murphy binder, devised by Miss Murphy, of the New York Maternity.

The binder of Richardson requires practice for its proper application. When properly applied, it is the best-looking binder that I have seen. I use it in one of the hospitals over which I have control, and the nurses there are skilful in adjusting it. In the hands of one unaccustomed to its use, the chances are that it will not be comfortable. This binder consists of a T-bandage folded and held by a safety-pin in the shape of a Y, the two arms of the Y surrounding the glands, and the single arm passing under the woman's back. In this way we get pressure from above and below, and obtain a firm and even support with comfort to the woman. You can see the effect of this mammary binder on the woman before you; you see how efficiently the binder must prevent engorgement; under its pressure the milk is running out of the breasts.

On another patient I show you the so-called Murphy binder. It is a solid piece of unbleached muslin with arm-holes, and a neck-hole V-shaped in front. This is undoubtedly the most generally convenient form of mammary binder. It can be made by any seamstress, and can be applied without any special skill. It compresses the breasts in all directions, squeezing them close together, and thus preventing engorgement. Had this woman well-developed mammary glands, you would see that they would be pressed so closely together as to be in actual contact, and that it would consequently be necessary to insert a layer of cotton between them to prevent friction and irritation of the skin. The second object of our treatment, the evacuation of the glands, is best obtained by the regular application to them of the best breast-pump there is, the infant's mouth. Should this be impossible, or, in rare cases, insufficient, the breasts must be emptied as often as necessary by massage, or by an artificial breast-pump, the best of the many on the market being the English.

RECTO-VULVAR FISTULA.

This patient whom I now show you has a recto-vaginal fistula, or rather a recto-vulvar fistula, of the kind of which I have spoken to you before, but due to a different cause. She was admitted to the hospital some four years ago with an abscess in one labium, which a few days before had broken spontaneously. From that time feces have passed partly by the vagina. There undoubtedly ex-

isted a collection of pus that, burrowing between the vagina and rectum, was discharged into the rectum and floor of the vestibule. This possibility is an argument for the early opening of an abscess in this situation. This woman, we find, has syphilis of an old date, and the edges of the fistula look like a chronic chancroid. There is a tradition in this hospital against operating upon cases of this kind. I once operated for this condition upon a syphilitic woman in the wards, not knowing the specific taint. The operation was performed with the utmost care, and I was satisfied with every point of it, but when I took the stitches out the whole was larger than at first. I operated again with a like result, so that after the second operation the woman's condition was much worse than it was before I had operated at all. I was thus convinced that the old tradition is correct, unless possibly by specific treatment the tissues are prepared for the operation. I intend to try this in the case before you. I shall administer mercury and iodide of potassium, and after a few weeks shall attempt an operation with some hope of success. Without such preparatory treatment the after-condition is likely to be worse than the first.

MAMMARY ACTIVITY AND MENSTRUATION IN THE NEWBORN.

I have here two infants, each presenting an interesting condition. You see that each presents a marked enlargement of the mammary glands, and that in the glands of one of them there is milk. To demonstrate this I squeeze the breasts; this is a bad practice, for the irritation thus produced might lead to inflammation and suppuration. It is a curious fact that in a large proportion of babies of both sexes we observe an engorgement and functional activity of the mammary glands between the fourth and the twentieth days after birth. I recall a case in which the enlargement equalled the size of a crab-apple, and out of the breasts a stream of milk ran across the chest. We cannot explain why this activity of the mammary glands should so early occur. It requires no treatment; indeed, in no way should the breasts be disturbed. The nurse may have an inclination to squeeze or manipulate the glands, with the mistaken idea that she can thus reduce the swelling, but this should be forbidden. In extreme cases a soothing lotion with inunction of the skin over the glands is called for. If an abscess should develop, it must be opened early, for a mammary abscess in a young infant is a more serious condition than in the adult; in such cases the mortality is quite high, as the pus has a tendency to break inward and infect the lungs. In one of these infants—a female—there was for a few days after birth a bloody discharge from the vagina, that has now ceased. In connection, apparently, with the activity of the breasts after birth, we sometimes see in the female an engorgement of the genitalia and a discharge of blood quite like the menstrual flow. About once a year I see a case of this sort, my attention being called to it by an alarmed nurse or mother, or sometimes by an astonished physician. When I first saw this phenomenon I too was very much interested, and endeavored to learn the source of the bleeding. Upon examination with a speculum improvised of two hairpins, I found the discharge coming from a point in the vagina higher than I could see, presumably from the uterus. Some time after this I saw in the *Transactions of the London Obstetrical Society* that a physician had had an opportunity of making a post-mortem examination in two cases, and had found the uterine mucous membrane in the same condition that it is in menstruation, and had discovered that the blood was oozing from this source. This condition also requires no treatment; the discharge ceases after a few days, and during its continuance the child does not suffer. It is a mistake to use astringent applications or even injections, a custom I have seen recommended, just as much so as it would be to use the same treatment in a menstruating woman. These phenomena seem to be closely allied—the action of the breasts and the discharge from the uterus after birth.

ARTIFICIAL FEEDING OF INFANTS.

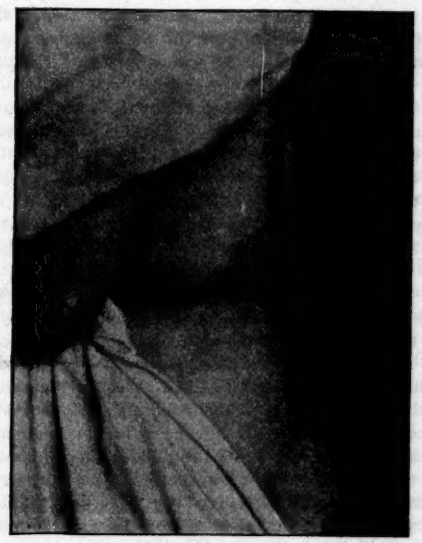
I wish now to show you an interesting contrast between a baby that is as well developed as we could desire, and another about as ill-nourished as it could be and live. The child in the nurse's arms has been breast-fed, and is the picture of a perfectly healthy infant; it weighs over twenty pounds. In contrast, here is this poor, miserable creature, that was brought into the house four weeks ago in a much worse condition than you now see it. This baby is about two months of age, and I presume was outrageously neglected outside of the hospital; it was fed from the bottle, and that usually implies ignorance and carelessness, if not actual neglect. When the child first came in I despaired of doing anything for it. But we put it on the system of artificial feeding at present in force here, and we have so far had a very satisfactory result. Since the child has been in the house it has increased in weight from five pounds and eight ounces to six pounds; it has gained half a pound. The food of this child has been condensed milk, water, and cream, and so long as it flourishes on this food we shall continue it. I trust we shall in time make of this miserable creature almost as healthy a child as is the other infant. Of course, when we start with such material we are seriously handicapped. Should any disease attack this child, it would be likely to succumb. You can have no better contrast between the ordinary result of feeding upon milk from the healthy mother's breast and the result of bottle-feeding as carried out by ignorant nurses and mothers. I shall have occasion to refer to this again in a later lecture.

About a year ago I devised a weight-sheet for infants in the house, which has been in use ever since; it is a very satisfactory method of observation. Each child's weight is taken daily and entered on this sheet, and by carefully studying the results we can form some opinion as to the relative merits of different kinds of feeding. The subject of artificial feeding is by no means definitely settled, but a solution can be reached only by this plan. The best method of artificially feeding young infants is to be learned with the help of organic chemistry, and must be demonstrated by clinical results. I shall in the near future devote a whole lecture to this subject.

LUMBO-SACRAL KYPHOSIS.

I have next to bring before you a woman seven months pregnant, with one of the most interesting deformities of the spine that I have ever seen in a preg-

nant woman. It is called lumbo-sacral kyphosis (see annexed illustration). The history of the case is as follows: This lump on her back first appeared nine years ago after having lifted a heavy weight. At the present time she is twenty-nine years of age, so that this deformity was produced in her twentieth year, and in consequence of its late occurrence it has not had much effect upon the size and shape of the pelvis; but had this accident occurred early in the girl's life, before the full development of the pelvis, she might have had an exaggerated degree of the deformed pelvis known as kyphotic. This woman has had one child, and experienced no difficulty in the labor. The only effect that the deformity of the spine has on her pregnancy and labor is to shorten the abdominal cavity, with the consequent production of a somewhat pendulous belly. As a result of the diminution in the perpendicular axis of the abdominal cavity, the child *in utero* lies transversely,



because in this position it finds greatest comfort. This may lead to a complication in labor by the presentation of the trunk of the child instead of one of the extremities, but very likely the first few labor-pains will right the malposition. From the surgeon's point of view, I would judge this to be a rare case. The luxation of the last two lumbar vertebræ here is apparently the result of a heavy strain, by which I presume the woman must have ruptured some of the ligaments of the spinal column. Injuries to the spinal column in which the force is exerted in the opposite direction result in what is called a spondylolisthetic pelvis, in which the last lumbar vertebræ, instead of slipping backward, slip forward and downward over the sacrum; but in this case, as the woman stooped over to lift a very heavy weight, the muscular force exerted was sufficient to spring the lower vertebræ backward. I cannot recall a similar case either in my reading or in my personal experience. This woman has the typical short, broad back that is seen in all humpbacks. In her case we shall do nothing but wait for the delivery at the normal termination of pregnancy, because we expect no greater difficulty than possibly a transverse presentation of the child. But it is astonishing how such cases correct themselves in this particular. I have seen the labors in four cases of marked humpback with true kyphotic pelvis. In three cases the transverse position of the child was corrected by the first few labor-pains, and the women delivered themselves without any more difficulty than is usually experienced by primiparæ. The fourth case, on the contrary, was one of the most difficult I ever had to manage. I first attempted craniotomy, but failed, and was compelled to do an immediate Cæsarean section, opening the abdomen and delivering the child before the woman recovered from the ether given for the first operation.

THE INDUCTION OF PREMATURE LABOR AT THE SEVENTH MONTH ON ACCOUNT OF A RHACHITIC PELVIS.

In the case I now bring before you, labor was induced in the seventh month of pregnancy. When the child was born it weighed only three pounds. It was placed in an incubator, in which it remained about a month, and is now, at six months of age, as healthy and hearty as any baby you could find. In this case the indication for the induction of labor was a high grade of contracted pelvis. It was one of the most contracted pelves that we have seen in Blockley for a long time. The delivery occurred in the service of one of my colleagues, who is to be congratulated on the good management of the case. I shall measure the pelvis before you, that you may see the practical application of pelvimetry, and may hear the interesting measurements as I make them. They are as follows:

Iliac spines	24.50 cm.
Iliac crests	24.00 "
External conjugate, Baudelocque's .	15.50 "
Internal " diagonal . .	9.25 "
True " estimated . .	7.00 "
Right diagonal	19.00 "
Left "	19.00 "
Circumference of pelvis . . .	71.20 "

These measurements show at once that we have to deal with a rhachitic pelvis, generally contracted as well as flat. This is shown by the relationship between the spines and the crests of the iliac bones. In addition, there is an interesting point here confirmatory also of the diagnosis of rhachitis; I find the depression beneath the last spinal process of the lumbar vertebræ almost on a line with the posterior superior spines of the ilia. In almost every well-developed female one can actually see the relationship between these three points. The depression below the last lumbar spine is well above the two dimples marking the posterior superior spinous processes of the iliac bones, so that these points with the beginning of the fold between the nates make a lozenge-shaped, or rather a kite-shaped, figure. This can be seen in the Capitoline Venus, and in many other statues of antiquity representing perfect women. In a rhachitic woman, on the other hand, this figure is almost or quite a triangle with the base above and the apex below. Moreover, on vaginal examination, I find in the case before us a very marked promontory, and a very marked increase in the conjugato-symphyseal angle, another symptom of rhachitis, so that we must subtract at least 2½ cm., if not a trifle more, from the diagonal conju-

gate to get the true antero-posterior diameter of the superior strait, making the latter not more than a scant 7 cm. This woman is very fortunate to have escaped, as she did, with a comparatively easy labor, and to have a child that has grown up so well. It was wise to resort to the induction of labor so much before the usual time. The success of the treatment for the interruption of pregnancy in cases of contracted pelvis demonstrates the advantage of this plan of managing pregnant women with contracted pelves, and shows the importance of always carefully considering this method of dealing with such cases before one decides upon Cæsarean section. In the present rage for abdominal operations that possesses so many surgeons, an unnecessary Cæsarean section is only too likely in a girl like this. Medical literature in the last few years contains not a few cases in which Cæsarean section was performed on much slighter grounds than we had in the present case.

A DEEP WOUND IN THE VAGINAL VAULT, OF MYSTERIOUS ORIGIN.

The next patient is a woman that, about a week ago, was brought in bleeding profusely from the vagina. She gave us the history that the bleeding had commenced about ten o'clock on the previous night. She was so profoundly reduced by the loss of blood that it was a question whether she could be saved or not. Her feet were placed higher than her head, the pillow removed, and the bleeding fortunately ceased spontaneously. The woman's temperature at first was so low that the thermometer would not register. When I first saw her, a few hours after her admission to the house, there was no more bleeding, but there was still a low temperature—96°—and a weak, rapid pulse. I placed a large tampon in the vagina, and ordered restoratives and stimulants. On the following day I made an examination, and, after a careful search, found the origin of the hemorrhage in a lacerated wound in the upper vaginal vault, a little to the left of the cervix, an inch or more in depth, and in its broadest part about half an inch across. I also found the posterior surface of the cervix raw, as if some rough instrument had been scraped over it. I questioned the woman closely as to the cause of this wound. She could give me no explanation of it whatever; she denied everything that might possibly account for it, but we had the evidences of our own senses. There was the freshly-made rent with ragged edges. We still remain in doubt as to the cause. I suspected at first it had been due to violence in coitus. Again, I suspected that the woman had been introducing something into her vagina, probably with the idea that she was pregnant, but she denies this absolutely. I think that the woman is keeping the truth from us, and that the injury was either inflicted in coitus or with an instrument of some sort. We gave the patient daily injections of an antiseptic fluid and tamponed the vagina. She is picking up very rapidly, and in a few days will probably leave the hospital. I would like very much to get a true history from her before she goes. If the wound was the result of violent coitus, it is a very rare case, and it is uncommon enough if it is due to the use of an instrument. The hemorrhage did not come from the womb at all. The uterus was firm, and the cervical canal tightly closed.

This shows you how little dependence can be placed upon the history of some gynecological cases. Had I relied upon the woman's statements, I would have been forced to believe there was probably a cancer of the womb or vagina; but, relying upon the evidences of my own senses, I can only ascribe it to one of the two causes mentioned.

CLINICAL MEMORANDA.

A CASE OF PUERPERAL SEPTICEMIA.

BY W. O. HUSTON, M.D.,
PENINSULA, OHIO.

THE symptoms and temperature-course in some cases of puerperal fever and pelvic abscess bear a striking resemblance to those of malarial fever. In the case of puerperal fever here reported the course of the temperature was erratic and deceptive.

Mrs. H., a primipara, twenty-three years old, was at term, by means of the forceps, delivered of a child that was apparently but recently dead. Strict antiseptic precautions were observed in the accouchement. The perineum was not ruptured.

On the evening of the second day the woman's temperature was normal; her pulse was 60. The only source of trouble was retention of urine.

On the third day the pulse was 100, temperature 99°.

On the fourth day the pulse was 116, temperature 101°.

I syringed the cavity of the womb with a quart of warm 1 : 40 carbolized water on the night and morning of the fifth day. The temperature was from 101.5° to 102°; the pulse 116. The evening douche was followed by a prolonged rigor lasting about an hour.

On the sixth day the temperature was 102.6°; the pulse 118. By means of a dull curette and a polypus-forceps, I removed a quantity of clots and shreds of membrane and placenta, from which emanated a slightly foul odor. Subsequently I applied a douche of mercuric chloride 1 : 3000. A rigor followed lasting about ten minutes.

On the following day, the seventh, the pulse was 105; the temperature 101° A.M., 100° P.M. During the night a sharp attack of diarrhea set in, to which, on the morning of the eighth day, were added distinct evidences of peritonitis. The pulse was 120; the temperature 103.4°. I kept the patient partially narcotized with morphine. I again curetted the uterus, removing a few clots devoid of foul odor. The lochia were apparently normal and at no time suppressed. There was an abundant secretion of milk. The abdomen was moderately tympanitic and tender. During the night the pain was so severe as to require the repeated administration of a third of a grain of morphine.

On the eighth day the morning temperature was 104°, the noon temperature 102.5°, the evening temperature 101.5°. The douches were discontinued. Dr. W. A. Knowlton saw the case in consultation and advised a continuation of the treatment, which had included quinine, iron, and whiskey in large doses, with morphine and occasional minute doses ($\frac{1}{10}$ grain) of calomel.

On the ninth day the morning temperature was 102.5°, the evening temperature 100°. The perspiration, which had been free since the third day, was now quite profuse.

On the tenth day the morning temperature was 101.5°, the evening temperature 99.5°

On the eleventh day the morning temperature was 100°, the noon temperature normal. At about 4.30 P.M. the temperature suddenly rose to 105°, the patient gasping for breath. Ten grains of phenacetin in two hours reduced the temperature to 102.5°.

On the twelfth day the morning temperature was 103.5°, the afternoon temperature 101.5°.

On the thirteenth day the morning temperature was 102.8°, the afternoon temperature normal. Fearing the development of a pelvic abscess I made a careful examination and found the uterus tender, hard, and enlarged, but could detect no deposit about it.

On the fourteenth day the morning temperature was 102.6°, the evening temperature normal.

On the fifteenth day the morning temperature was 102.4°, the evening temperature normal.

On the sixteenth day the morning temperature was 102.4°, the evening temperature 98°.

On the seventeenth day the morning temperature was normal, the evening temperature 102.2°.

On the eighteenth day the morning temperature was normal. Thenceforth the temperature continued normal until the twenty-first day, when it rose to 102.5° for a few hours, again to fall permanently to the normal. Convalescence was now rapid.

One peculiarity about the temperature in this case was the frequency with which it rose in the morning and fell at night, sometimes to normal. The temperature was apparently uninfluenced by quinine, which was given every two or three hours during the day and night, at the rate of from eighteen to seventy-two grains in twenty-four hours, according to the urgency of the symptoms. The largest quantity never depressed the temperature more than one or two degrees. Here was a picture suggestive of remittent and intermittent fever: rigors, fever, sweating, intermissions with exacerbations at times sudden and unexpected.

As to the source of the infection in this case, I have already indicated that the hands and instruments were carefully disinfected. I had not attended a case of contagious disease or held a post-mortem for several weeks. The attendants were neat and clean. The surroundings were good. The recent death of the child would preclude the possibility of infection from that source. The Credé method was employed in the removal of the placenta and the membranes were twisted so as to bring them all away; nevertheless a number of fragments of placenta and membranes were removed with the clots, although their odor was scarcely offensive. In how many thousand cases do like conditions prevail without any evil result. There was no laceration of cervix or perineum.

Dr. W. T. Lusk, a few months ago, in reporting a case of puerperal septicemia seen in consultation, after searching in vain for a cause, finally hit on a foul water-closet, which the woman had several times used before confinement. It occurred to me that if such were the case, why do not more women living outside of the cities have puerperal fever, for they are all compelled to use foul privies.

One point more. During the progress of this case I attended three other women in confinement. Before visiting them I bathed my whole body in a 1 : 2000 solution of mercuric chloride and changed all my clothing. All three cases did well.

A CASE OF ACUTE INTERNAL STRANGULATION OF THE BOWEL IN A CHILD TWO YEARS OF AGE; LAPAROTOMY; DEATH.

BY W. L. SCHAEFER, M.D.,
OF RIDGEVILLE, OHIO.

IN September I was asked to see H. B., two years old, who, the parents told me, had been well until the day before, when he was suddenly seized with colicky pains in the abdomen. In the course of two hours vomiting set in. The vomited matter at first consisted of the contents of the stomach, afterward of bile, but it soon became stercoraceous. The countenance assumed an anxious expression; the eyes were sunken; the pulse was frequent and feeble; the temperature was normal. The child manifested great thirst, but the fluid taken was almost immediately returned. A movement of the bowels took place, the stool consisting principally of mucus, and containing no blood. The abdomen was tympanitic, but no tumor could be detected. Four grains of the mild chloride of mercury, with five grains of bismuth subnitrate, were administered, but were not retained. The vomiting continuing, injections of warm water were given on the following day. These were retained for a while, but brought away no feces. An ounce of glycerin was injected, but soon returned.

The colon was filled with water, but with no result. As a last resort, air was injected by means of a small pair of bellows. This but increased the distention of the abdomen, and greatly added to the distress of the little sufferer.

A day later the abdomen was still greatly distended, and somewhat tender. The peristaltic contraction of the small intestines could be plainly seen through the abdominal walls. The temperature was 101°. As it had become night, I gave one twenty-fourth of a grain of morphine sulphate.

On the following morning Dr. Henderson, of Waynesville, saw the case with me, and abdominal section seemed to offer the only hope. The parents having consented, with the assistance of Dr. Ward, of Lytle, I operated in the afternoon. On opening the abdomen by a median incision, the bowels were found so greatly distended as to obstruct and hinder manipulation. There was no evidence of peritonitis. The obstruction was found to depend upon a complete twist of the small intestine, about four inches above the ileo-cecal valve. The gut between the twist and the ileo-cecal valve was completely collapsed, showing that neither air nor water had passed the valve. The gut was carefully untwisted. It was dark and deeply congested, but not gangrenous. The peritoneum was brought together by buried sutures of fine iron-dyed silk.

Sufficient superficial sutures were placed in the abdominal walls to accurately approximate the cut surfaces, and powered iodoform was dusted over the line of incision. Absorbent cotton and a bandage completed the dressing. The usual antiseptic precautions were observed. When the patient emerged from his anesthesia he was snugly wrapped in a hot blanket, placed in bed, and given a small dose of morphine, one-thirtieth of a grain, with a little whiskey. Reaction, however, failed to set in, and the patient gradually sank, and died two hours after the operation.

REMARKS.—While the result in this case was bad, there are some lessons of practical value to be learned from it. I think that we waited too long, trusting to other means, namely, cathartics, enemata, injections of air and water. One point that was clearly brought ont was the irrefutable evidence afforded by the collapsed condition of the gut, between the ileo-cecal valve and the seat of strangulation, that neither air nor water passed the valve.

ANTIPYRIN IN WHOOPING-COUGH.

BY W. A. DEWOLF SMITH, M.D.,
SURGEON TO THE BRITISH COLUMBIA PENITENTIARY, NEW WESTMINSTER, B. C.; VICE-PRESIDENT OF THE B. C. MEDICAL COUNCIL.

THE unsatisfactory nature of the treatment of whooping-cough is easily seen by looking over any article on the subject, or by consulting Neale's *Medical Digest*, where a list of remedies is given taking up a full page and a half of that book.

Almost any remedy in the Pharmacopœia (and many out of it), from charming by a seventh son to vaccination, and from aconite to tar, seems in some hands to have produced good results. The list includes almost every class of remedy—sedatives, tonics, alteratives, antiseptics, and stimulants, and even flagellation has been recommended for it, but fortunately without meeting with any very general acceptation.

During the earlier days of antipyrin much was written in its favor, and it was held up as almost a specific in whooping-cough by Sonnenberger;[1] Griffith,[2] who followed Sonnenberger's method; Genser;[3] Dubousquet-Labordière;[4] and Tordeus, of Brussels,[5] who all obtained good results from it; and more recently a writer in THE MEDICAL NEWS[6] advances the claims of antipyrin.

It must not be forgotten, however, that there is another side to the question, for other observers have found that it either had no effect in controlling the spasms, or that it had positively harmful effects. Amongst those that have not had good results from antipyrin are Monti (of Vienna),[7] Baginsky, and Tuczek, the two last mentioned having seen alarming effects from its use.

My own experience with the drug has been limited to about ten cases during the last three years, and although I have not seen any harm come from its use, the effects in each case were negative. The cases ranged from one to twelve years of age, and were first seen in an early stage of the disease. The remedy was given after Sonnenberger's method—*i. e.*, a dose graduated according to the age of the child. In no case could I see that the disease was at all shortened in its course, nor was there any difference in the severity of the complaint when the remedy was stopped after having been administered for some days.

It is quite clear, therefore, to my mind, that although we have in antipyrin a most valuable remedy in certain forms of disease, its claim to rank as a specific in whooping-cough is not yet established on a sure and certain foundation.

[1] Lancet, 1888, vol. i, p. 437.
[2] THE MEDICAL NEWS, vol. lii, p. 266.
[3] Deutsche med. Wochenschr., April 19, 1888.
[4] Rev. Gén. de Thérap., May 15, 1888. Gaz. Hebd., March 15, 1889.
[5] Lancet, 1889, vol. i, p. 852.
[6] THE MEDICAL NEWS, vol. lix, p. 630.
[7] Montreal Medical Journal, vol. xviii, p. 316.

MEDICAL PROGRESS.

An Unusual Neurosis.—HELMUTH (*Casopio Ceskych Lèkaru*) has reported the case of an unmarried, intelligent teacher, twenty-five years old, with no neurotic family history. Menstruation was regular in time but protracted in duration, and always accompanied with pain. Following an injury to the left eye from a broken violin-string, it was noticed that reading readily caused annoyance. On examination no lesion of the eyes could be detected. There was considerable headache. Soon it was observed that on excitement or emotion the left half of the face flushed and became warm, and in the course of two or three seconds the left side of the head and face became the seat of profuse perspiration; the left ear became purple, and from the auditory canal there flowed an aqueous discharge. There was a sense of fulness in the left nostril. At the same time the right side of the face became pale, dry, and cold. If the provocation was intense, the left arm up to the elbow-joint became red, but without perspiration. The phenomena were aggravated during menstruation. Improvement took place as menstruation was regulated and existing constipation was overcome. Iron and aloes were the medicaments employed.

Inflammation of the Vas Deferens Without Epididymitis.—MAURIAC (*Annal. de Dermatol. et de Syphil.*, No. 6, 1891) has recorded the case of a man with gonorrhea and cystitis, who, on the thirty-third day of the disease, after a long journey on foot, was seized with severe pain in the hypogastrium. After the pain had been relieved by the application of ten leeches, the prostate, by rectal examination, was found to be normal. The vesicula seminalis, however, was represented by a small, hard, enlarged mass, while the vas deferens was also hard, enlarged, and painful. The internal opening of the inguinal canal acted as a barrier to the extension of the inflammation, and epididymitis did not develop. In all his experience Mauriac had not previously observed inflammation of the vesicula seminalis and of the vas deferens, without funiculitis and epididymitis.—*Deutsche med. Wochenschr.*, No. 44, 1891, p. 1232.

Recovery from a Tumor in the Region of Right Crus Cerebri.—THOMSON (*Edinburgh Medical Journal*, September, 1891) recently presented to the Edinburgh Medico-chirurgical Society a girl, six years old, who fifteen months previously, when she was presented to the society, displayed paresis of the left side of the face and of the left arm and leg, paralysis of the muscles supplied by the right third nerve, slight optic neuritis, and marked mental dulness. With careful feeding and the administration of cod-liver oil and iodide of iron, the palsy had moderated; slight dilatation and sluggishness of the right pupil remained; the neuritis had disappeared; the mental condition had improved; and there had been a gain in weight and strength. The lesion was considered as a tuberculoma in the region of the right crus cerebri.

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SATURDAY, JANUARY 9, 1892.

THE ELIMINATION OF THE DANGERS CONNECTED WITH MILK-SUPPLY.

THE economic and sanitary advantages of milk-inspection cannot be over-estimated. As commonly practised, adulteration consists either in the addition of water or in the removal of more or less of the cream, or in both. The effect of lowering the nutritive value of an article that enters so largely into human diet, that is so much depended on in the sick-room, and that is so universally used as food for infants, can be readily comprehended.

The law directs that only pure milk shall be sold, and yet the means of accomplishing this object fail in some most important particulars. Milk may be the vehicle of conveying the poison of disease. It has been proved beyond doubt that the *materies morbi* of enteric fever, of scarlatina, and of diphtheria has been conveyed through this medium; and it is extremely probable that tuberculosis can be transmitted in the same way. The tests ordinarily applied to milk fail to detect the specific germs of these diseases.

Chemical analysis, though of the greatest advantage in accurately determining the composition of milk and in detecting adulteration, is unable to discover the living pathogenic entities, which are the more dangerous because of their power of directly producing disease. In order, therefore, to guard against this subtle danger, and in order to render milk-inspection a positive protection, it is necessary to resort to other methods of investigation. Fortunately, in biologic examination we have a valuable means of supplementing chemic analysis. If biologic examination were only occasionally the means of detecting the tubercle-bacillus in milk, the discovery would be of sufficient value to compensate for the investigation, for by it the dairy-farm from which the milk was obtained could easily be discovered, and the diseased animals that day after day caused the milk of an entire herd to be infected could be promptly destroyed.

But the investigation need not be confined to tuberculosis. Biologic science has made rapid strides, and is constantly adding to our knowledge of the rôle played by microörganisms in the causation of disease. This knowledge, whenever practicable, should be made use of in conserving the public health.

Both chemic analysis and biologic examination have their special and well-defined fields of exploration. When one fails, the other may be able to make valuable discoveries. Their office is to aid one another, and supply each other's deficiencies. Hence, the best results are to be obtained when the two methods of examination are combined.

Another means of protection, and a most important one because it strikes at the source of contamination, is the systematic inspection of dairy-farms, dairies, and milk-shops. This practice is required by the English law and to some extent is carried out, but in America it is almost entirely neglected. Milk may be contaminated by the addition of impure water in the milk-houses, and is frequently adulterated after it leaves the dairy-farm; but the most dangerous source of contamination is at the dairy-farm itself. For this reason, inspection is very incomplete that does not include a watchful supervision of the cattle, their environment and treatment, and all the conditions under which the milk is prepared for the market. The seeds of tuberculosis lie concealed in what to all appearances is wholesome milk, and who can tell what amount of disease is distributed through the unsuspected agency of this common article of food? There is less likelihood of infection from anthrax or

malignant pustule, and foot-and-mouth disease, as self-interest prompts the dairyman to quickly exclude from his herd animals sick with these diseases.

It has not been determined whether or not the milk of cows suffering from actinomycosis, caused by malignant ray-fungus, is capable, through its ingestion, of propagating the disease, but until this point is decided the milk should be rejected as suspicious. We have known cows suffering from this affection to be milked for a season, and then turned over to the butcher for slaughter—a practice that is reckless if not positively dangerous in its ultimate results. MR. ERNEST HART has tabulated a number of epidemics of enteric fever, scarlatina, and diphtheria that have been definitely traced to milk infected at the dairy-farm. The milk of cows fed on distillery waste, or that are sickly or in bad condition from unsuitable food, impure water, bad housing and care, or that have recently calved, cannot be regarded otherwise than with suspicion. Milk is known to have been infected by the hands of the milker convalescent from scarlet fever. Typhoid fever has been propagated by the use of infected water for rinsing the milk-cans and diluting the milk.

It is seen that the liability of contamination to which milk is exposed at the place of collection is very great and constitutes the chief source of danger, especially so as most of the elements of danger may escape detection by the ordinary methods of laboratory investigation. Hence the necessity of establishing systematic inspection of all dairy-farms as well as of milk-shops by competent officers amply clothed with authority to compel the observance of regulations for their proper sanitary administration.

It is important that none but healthy cattle should be permitted in the herd. Cows affected with tuberculosis or other dangerous infectious or contagious diseases should at once be isolated or destroyed. Pure water is quite as essential to the health of animals as is wholesome food. Special attention should be directed to the housing of the cattle. Cleanliness and ventilation are most important requirements. The possibility of contamination of the water-supply from any source, especially by the cesspool, is to be carefully guarded against. The greatest cleanliness is to be observed in collecting and in handling the milk.

Should contagious disease break out in the dairyman's family, he should be prepared by previous instruction to guard the milk-supply from this source of danger. Printed instructions covering the management of the dairy-farm should be supplied to the farmer, and the inspections should be sufficiently frequent to see that the instructions are faithfully carried out. By adopting the plan thus briefly outlined, in conjunction with the tests usually applied to milk when delivered in the city, there is the assurance that the milk-supply will be most effectually guarded against adulteration and contamination.

The inspection of dairy-farms should be conducted under the provisions of a law applying to the whole State. Cities obtain their milk-supply from surrounding and even distant counties, in territory lying beyond their jurisdiction, and they are therefore powerless to exercise the necessary supervision. This is also true of towns and villages, though in the case of these there is less difficulty in obtaining information with regard to the source of the supply. In the absence of a general law, protection might be secured by permitting the sale of milk under license by those producers only that submit a satisfactory certificate of inspection of their herds and farms made by qualified persons at such stated periods of time as may be determined upon. The details of inspection should cover the matters of investigation already pointed out, and the reliability of certification should be subject to proof.

WORK OF THE DREXEL INSTITUTE.

THERE are few tendencies or facts that more continuously and exasperatingly act as brakes to medical progress than popular ignorance of physiology, hygiene, and sanitation. It is to this ignorance that quackery of a thousand types, the patent-medicine shame, and medical obscurantism, owe their vogue. Every agency, therefore, that looks to dispelling this ignorance must be hailed with delight by the medical profession. The establishing of departments of hygiene like that of the University of Pennsylvania is prophetic of the great science of preventive medicine, of which the University Extension movement, bacteriological laboratories, gymnasia, etc., are glimpses and promises.

But to those that would grapple with the real evils of life it has always seemed strange and profoundly sad that democratic education seemed fatally prone to imitate the useless virtues, decaying graces, and luxurious superfluities of aristocratic para-

sitism. The daughter of the mechanic was taught piano-thrumming, embroidery, or rhetoric, instead of potato-cooking, dressmaking, or household economy. The dream of the young lady's brother was to be sharp-witted, get "a pull," get ahead, and learn the wasteful vices of fashionable loaferdom. It is, for example, quite impossible to estimate the disease-producing power of the universal scorn of the art of cookery—an art upon which our physical health and more than physical happiness instantly and continuously depends.

In that splendid proof of modern heroism, the "Drexel Institute of Art, Science, and Industry," it is most gratifying to find that the physical and physiological, the intensely practical problems and needs of life are clearly seen, met, and provided for. To take a single instance: according to the *Preliminary Circular of Information* issued by the Institute—"The department of Domestic Economy will offer a liberal course of instruction and training for girls and young women in everything pertaining to the organization and management of the household. It will be thoroughly practical, while aiming to broaden the culture of young women in directions that have been heretofore neglected in their general education.

"The course will extend over two years, and will embrace cookery, millinery, and dressmaking, the building, sanitation, decoration, and management of the house, household economy, human physiology and hygiene, business forms and accounts, free-hand drawing, elementary economics, and physical training."

The course in cookery consists of instruction in the most practical details, beginning with the making and care of the fire, and ending with the chemistry of foods. There is a collection of food-products and preparations as an auxiliary of the course. The department of Physical Training will give opportunities for the physical culture of girls and young women, children and adults, lectures on personal and public hygiene, etc.

THE OBSOLESCENCE OF MEDICAL TERMS.

THE suggestion to abolish the use of the word phthisis, at least in its application to tuberculosis of the lungs, is both practical and progressive. First introduced to designate conditions attended with wasting, its application gradually became restricted to the commonest condition of which wasting is a most conspicuous manifestation, and for which phthisis then became a synonym—pulmonary tuberculosis. There are few dissentients to-day from the doctrine of the unity of phthisis, and those few will have to adopt some more distinctive name if they decline to accept that in common employ. There is now no further need for the word phthisis, and as a useless term it should be rooted out of medical nomenclature.

A somewhat analogous transformation is illustrated by the varying employment of the word apoplexy. First used to designate the sudden loss of consciousness that results not only from cerebral hemorrhage, but also from thrombosis and embolism, it subsequently became synonymous with the most common of these conditions—hemorrhage. Then its application was extended until hemorrhage into other viscera was also spoken of as apoplexy. Thus hemorrhage into the lungs became pulmonary apoplexy. There is now no further use for the word apoplexy, except as descriptive of a condition that is but symptomatic.

There is one other word that is most opprobrious, and that should be relegated to the obscurity that gave it birth—the word cancer. There was a time when the histological structure of neoplasms was even less well understood than it is to-day. Then all malignant growths were considered cancerous—and we fear that even to-day the careless and the uninformed are indifferent in their designation of such growths. With the creation of the word carcinoma there is no further necessity for the word cancer. The one can never be misunderstood, the other is vague, and bespeaks lack of precision.

Let us henceforth refrain from saying phthisis, apoplexy, and cancer, when we mean pulmonary tuberculosis, hemorrhage, and carcinoma.

MEDICAL ASPECTS OF COAL-BURNING.

LONDON has been shut in more than midnight darkness by a fog more dense and persistent than ever experienced before. People could not see their hands before their eyes in mid-day. Great suffering, thousands of accidents to life and health, have occurred, and the "smoke-nuisance"—the origin of the fog-nuisance—has become a matter of national medical concern. According to scientific calculations about 100 tons of soot fall upon the 110 square miles of roofs and streets of London each day. The number of fogs is constantly increasing, just in pro-

portion to the consumption (or, to speak more correctly, the non-consumption) of coal. Between six and seven million tons of coal were burned in the metropolis in 1890. Fogs in cold weather are invariably accompanied by a rise in the death-rate. Of course, to some extent, even in our country we are running the same race, and, though less possible of estimation, our death-rate must constantly be affected by the same cause. If, as certainly is true, sunshine is necessary to healthy life, human as well as vegetable, it becomes more and more imperative that mechanical ingenuity and sanitary science must teach our legislators how we may stop a million chimneys from belching forth into the atmosphere thousands of tons of black clouds of unconsumed carbon—a wretched pecuniary waste, but a still more pernicious squandering of health and life.

CORRESPONDENCE.

AN EASY METHOD OF ESTIMATING THE PERCENTAGE OF ALBUMIN IN URINE.

To the Editor of THE MEDICAL NEWS,

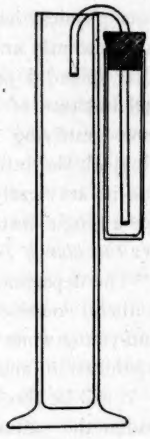
SIR: In THE MEDICAL NEWS of December 19, 1891, is a letter on the "Maximum Percentage of Albumin in Urine," which calls attention to the confusion and inaccuracy of statements in regard to the proportions of albumin in urine. The only accurate method of determining the percentage of albumin in urine or in other fluids is to separate the albumin and then carefully wash, dry, and weigh it. This process is tedious, and often impracticable. The general practitioner needs a short and easy method that is fairly accurate, and it is most desirable that some such method should be generally adopted. I have been in the habit of using a simple and rapid process that yields comparative results that are sufficiently accurate for practical purposes. While I make no claim to novelty in the procedure, the fact that there is no single method in general use leads me to describe it as one that is convenient and that requires no special skill or dexterity.

I have had constructed a tube, of which the accompanying drawing (Fig. 1) represents about one-fourth of the actual size, with an arbitrary graduation up to 100. In a test-tube of convenient size, I boil a little more than half a fluidounce of urine, to which have been added four or five drops of ordinary acetic acid. If the urine be turbid, it may be filtered before being boiled. After thorough boiling and allowing the urine to cool for two or three minutes, it should be well shaken, in order to divide the precipitated albumin as finely as possible, and then the graduation tube is fitted to the 100 mark. After twelve hours' standing, the percentage of precipitate is noted. The albumin will settle in twelve hours, and the volume of the deposit is not sensibly diminished if it be allowed to stand for twenty-four hours. The proportion of albumin measured in this way should be called *the percentage in volume of undried albumin.*

This method is not exactly accurate, but it is sufficiently so for ordinary purposes. It will indicate fairly well a proportion of 1 or 2 per cent. of albumin. When the proportion is less than 1 per cent., the ordinary method by contact or by simple boiling with a few drops of acetic acid would indicate "a trace" of albumin.

FIG. 1.

FIG. 2.



While writing upon this subject, I am led to describe a simple apparatus for detecting the presence of sugar in the urine, when the results of Fehling's test are uncertain. The accompanying drawing represents the apparatus one-fourth size. A small straight bottle or a small test-tube is fitted with a cork, through which is passed a small tube that reaches nearly to the bottom. The glass tube is bent so that the apparatus will hang over an ordinary test-tube or other convenient vessel. (Fig. 2.) The bottle is completely filled with urine, with which a piece of Fleischmann's yeast, about the size of a pea, has been thoroughly mixed. In putting in the cork, it is necessary to be careful to exclude every bubble of air. If the apparatus be kept for a half-hour at a temperature of from 80° to 90° F., a bubble of gas will appear if sugar be present in the smallest quantity. The apparatus may be placed in the sun or near a heater, but the temperature should not be higher than 100°. This is valuable as a negative test. In case of doubt I have often been able to determine absolutely the presence or absence of sugar before I had finished taking the history.

Procedures for the examination of urine, to be available in ordinary practice, must be short and easy, requiring little time and no great skill in manipulation, otherwise examinations that may be important will be neglected.

In the hope of contributing something to the needs of the busy practitioner, I have ventured to make this communication. With the method I have described for the estimation of the percentage of albumin, Doremus's

ureometer for determining the proportion of urea, and Roberts's "differential density" process for quantitative analysis for sugar, a chemical examination of the urine sufficiently complete and accurate to meet the requirements of most cases, is easily within the reach of every physician. Sincerely,

AUSTIN FLINT, M.D.

14 WEST THIRTY-THIRD STREET,
NEW YORK CITY.

TENDON-LENGTHENING BY SPLITTING, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: As regards details of cases of lengthening of tendons by splitting them, etc., after the method recommended by Dr. Rhoads, I beg leave to state that, according to the enclosed copy of the German Hospital Records, I operated January 13, 1888, exactly according to Dr. Rhoads' method, on the contracted flexor tendons of the forearm of C. F., a girl twenty-two years of age, giving her a useful hand. I enclose a diagram also copied from the Hospital Record-book.[1] I performed the same operation some time before this, however, in a case of pes varo-equinus, and lengthened the tendo Achillis, but I have no notes of the case. I also operated in this manner on October 25, 1888, at the Presbyterian Hospital of this city, for the same defect. It was a case of pes equino-varus with contraction of the tendo Achillis in a girl eighteen years of age. Arthrodesis was done at the ankle-joint and Chopart's articulation, and the tendo Achillis lengthened in precisely the same way as recommended by Dr. Rhoads.

The idea was familiar to me, though I fail to find the method in any of the text-books in my possession. But do not doubt that somewhere an older communication to that effect must exist.

Allow me here to mention and recommend another method that, in suitable cases, will be found useful, and one that I have practised (if I am not mistaken) since 1884, my first case being one of lengthening the quadriceps tendon in an old fracture of the patella. It consists in cutting across the tendinous portion within its connection with the lateral fleshy muscular tissue. The latter will allow of considerable stretching, and in this manner the continuity of the organ will be preserved while lengthening is achieved, the degree of which, of course, varies in different muscles. In a contraction of the flexors of the forearm I found a combination of both methods very useful. I also combined this method with the flap method (reflected flap) in a case of injury to the extensors of the wrist, in which an extraordinarily wide gap existed between the stumps of the tendons four weeks after the original injury.

I do not know whether anyone before me has put this same idea into practice. At all events it seems not to be known, and I would like to mention it here, hoping that it may be useful and of benefit to patients.

I remain, yours very respectfully,

F. LANGE, M.D.

NEW YORK.

[1] Not reproduced because illustrating essentially the same method of operation as recommended by Dr. Rhoads and others.—ED. MEDICAL NEWS.

PHENACETIN IN THE TREATMENT OF INFLUENZA.

To the Editor of THE MEDICAL NEWS,

SIR: It is of great advantage to have at hand a remedy upon which one can place reliance, particularly for those diseases in which the onset is rapid and is attended with intense pain and hyperesthesia and considerable nervous derangement, the temperature mounting up to 102° or 103°, as is the case in influenza. Such a remedy will have enhanced value if it be quick in action, and if it can be employed without injury to patients. These advantages belong to phenacetin and sodium salicylate, which I have used in combination in a considerable number of cases of influenza with the happiest results. I have found the combination rapid, safe, and certain in action. I prescribe 5 grains each of phenacetin and sodium salicylate with 2½ grains of sugar of milk, the first two doses to be taken at an interval of two hours, and the subsequent doses to be taken at intervals of three hours. A laxative is given, if required. Attending bronchitis, pneumonia, either croupous or catarrhal, or other complications, while not a contra-indication to the employment of phenacetin and sodium salicylate, should be treated in the usual manner.

The method of treatment outlined may elicit criticism and be condemned as dangerous, particularly by those who have not employed it. I have, however, found it safe. I have employed it in the cases of childen as young as nine months, as well as in adults advanced in years. I do not advise the reckless and indiscriminate use of phenacetin; but, given intelligently and watched carefully, I consider it not only a safe, but a most valuable remedy. When necessary, stimulation may be added to the treatment.

Respectfully,

S. RUSH KETCHAM, M.D.

PHILADELPHIA.

THE TREATMENT OF HEMORRHAGE IN TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: I wish to enter a protest against the usual and generally-accepted treatment of intestinal hemorrhage in typhoid fever. My last few cases, having ended in recovery, without medication, encourage me to believe that my previous results (about 50 per cent. mortality) in this alarming accident, were due to hypermedication. The hemorrhage has usually ceased by the time that its occurrence is recognized.

The remedial agents usually employed are ergotin, tannic acid, plumbic acetate, and opium. The hypodermatic injection of ergotin causes, first, a lowering of the arterial pressure, which is soon followed by an increase of pressure, so that ergot, if not harmful, is at least of doubtful utility. I have seen two cases of gangrene of the toes in the course of typhoid fever in which ergot had been administered.

A popular and favorite prescription for intestinal hemorrhage in typhoid fever contains tannic acid, tincture of opium, turpentine, and chloroform. The tannic acid is presumably selected for its local effect in traversing the intestine, or for its conversion into gallic acid in the circulation. The astringent effect can at best be but

slight. The tincture of opium is anti-peristaltic, but it is questionable whether muscular paralysis is desirable. Would one administer opium after labor or abortion, when the uterus is filled with clots that may become septic? In typhoid fever the putrid sloughs in the intestine are a source of infection.

Respectfully, JOHN RODMAN, M.D.

ABILENE, TEXAS.

SPECIMENS OF URINE DESIRED.

To the Editor of THE MEDICAL NEWS,

SIR: I am exceedingly anxious to obtain specimens of urine from cases of typhlitis or appendicitis, in order to determine, by an examination of this fluid, if it is not possible to diagnosticate the occurrence of suppuration and the presence of abscess more certainly than by the usual subjective and objective symptoms of pus-formation presented by the patient, which hitherto have had to be relied upon in arriving at an opinion as to the advisability of operation.

I beg to ask those in whose hands unquestionable cases of these ailments may come, whether abscess be suspected or not, that they will favor me with *fresh* specimens (about one pint) of urine, accompanied by a slip stating diagnosis (appendicitis, typhlitis, perityphlitis), and if it is believed an abscess is in process of formation or has formed. These specimens may be sent, in the janitor's care, to the Jefferson Hospital, Monday, Wednesday, Thursday, or Friday mornings by 10 o'clock, or, preferably, to my address, or they may be held to be called for at the house of the donor.

Very respectfully, D. D. STEWART, M.D.

1630 NORTH FIFTH STREET.

REVIEWS.

REGIONAL ANATOMY IN ITS RELATION TO MEDICINE AND SURGERY. By GEORGE MCCLELLAN, M.D., Lecturer on Descriptive and Regional Anatomy at the Pennsylvania School of Anatomy; Professor of Anatomy at the Pennsylvania Academy of the Fine Arts, etc. In two volumes. Vol. I. Philadelphia: J. B. Lippincott Company, 1891.

THE feature of this work that first attracts attention, and gives it a peculiar and distinctive value for the practitioner, is the illustrations. These are wonderfully faithful lithographic reproductions of photographs taken by the author from dissections made with his own hands, and they show not only his skill and ingenuity as an anatomist, but his judgment and dexterity as a photographer. Each object of interest in a plate is indicated by a numeral, placed not on the part itself, but at the side of the picture, and the two are connected by a horizontal line heavy enough to be readily descried, and yet so delicate as to cause no interference with the pictorial effect. The numbers are arranged in regular order, so that reference from the explanatory table to the plate, and *vice versa*, is rendered as easy as possible. To one that experiences annoyance at the disfigurement of illustrations by direct labelling, and at the expenditure of time in the search through a whole paragraph of reference-titles that are merely pitchforked together (and who has not been fretted by these things?), this simple device is a boon that should be highly appreciated.

The plates are all colored—the title-page tells us, "after Nature;" but, in the preface, the author admits the possibility of "some excess of tint or shade, as might be expected when the paints are mixed and applied with more enthusiasm than artistic skill." The coloring certainly enhances the worth of the pictures by as much as it facilitates the discrimination of their various parts; and nobody will be disposed to quarrel with any exaggeration of hue that he may observe. But, as regards most of the plates, we must take issue with the assertion that the tints are such as we find in the objects that they represent. It is true that arteries which have been injected with vermilion wax will permit the gorgeous pigment to show through their walls; but the color of these vessels then becomes artificial, and the imitation of it in the plate, however perfect, is not entitled to be called natural. The student deriving his knowledge of anatomy largely from pictures in which one set of vessels is always red, another always blue, and the nerves snow-white, unless he is wisely warned, is doomed to grievous disappointment when he essays operations upon patients in whom Nature has not considered his convenience by a similar distribution of pigments. And so, while we express our admiration of these superb illustrations, the very artificiality of which is a merit, we trust that we shall not be accused of cavilling, if we object to the statement that they are "colored after Nature."

Several plane sections are introduced with excellent effect, and we regret that this modern and peculiarly useful method of demonstrating the relations of the different parts in a given region has not been employed more extensively.

The number of figures in this volume exceeds one hundred, and a still larger series is promised for the second.

The text is excellent. The author is evidently a practical man, who understands the needs of the progressive physician and surgeon. This is evidenced by the conspicuous attention bestowed upon cranio-cerebral topography, a knowledge of the relations of surface-markings to underlying areas of the brain being demanded in these days of every surgeon. This involves the introduction of craniometric terms with which most medical men, and even some medical lexicographers, are unacquainted; but a familiarity with these words is, even now, essential to the comprehension of the reports of encephalic operations. When it is necessary, attention is directed to the practical bearings of the facts of particular structures, and the author imparts vitality to his discourse by emphasizing his points with brief and modest mention of cases coming under his own observation. The selection of illustrative instances is judicious, and the reader is not wearied by the presentation of many exceptions, so phenomenally rare as to be of no advantage to the great majority of practitioners. It was obviously intended to omit unimportant details, as is seen by the mere allusion to certain small venous sinuses at the base of the skull; but the difficulty of refraining from minute description is shown here and there, as in the case of the intrinsic muscles of the pinna of the ear, of which most of us are content to be ignorant.

It is not to be expected that so comprehensive a work

would be free from errors, and we have noted quite a number; but, while we do not care to make extended comment on them, we can hardly refrain from deprecating the slip by which the epithelial lining of the oropharynx is compared with that of "the rest of the mouth." It is so hard for some students to learn that the pharynx is not a portion of the mouth, that we deplore the sanction that is here afforded their mistaken notion.

The style of the writing is easy and for the most part clear; but occasionally there are infelicities of expression that cast some obscurity over the meaning. We suppose that it is of no avail to protest against the almost universal custom of anatomical writers that implies a perfect acquaintance with the original designs of the Creator, but the readiness with which the intention in the formation of the various organs is assigned is provocative of inquiry as to the source of their information.

It is gratifying to notice that the metric system is employed in stating measures and weights, and we experience a quickening of the long-deferred hope that the day is not distant when it will be unnecessary to translate each term of this easy—because decimal—system into the antiquated nomenclature in prevalent use.

This work approaches its subject with so different a purpose from that of the ordinary text-books on descriptive anatomy that it will not be expected to supplant them. Rather will it give them a new interest and value by complementing their service, and tending to render more attractive a branch of science that is too little studied both in and out of the schools, though it is at the foundation of all true knowledge in medicine. We congratulate the author upon his achievement in this first part, and shall look for the second with very pleasant anticipation.

A MANUAL OF VENEREAL DISEASES: BEING AN EPITOME OF THE MOST APPROVED TREATMENT. By EVERETT M. CULVER, A.M., M.D., Pathologist and Assistant Surgeon, Manhattan Hospital of New York City, etc., and JAMES R. HAYDEN, M.D., Chief of Clinic, Venereal Department of Vanderbilt Clinic, College of Physicians and Surgeons, New York. With Illustrations. 8vo, pp. 294. Philadelphia: Lea Bros. & Co., 1891.

THE arrangement of this book invites comparison. The work is divided into two parts. The first part, designated "Gonorrhea," is by Dr. Culver, and includes two chapters on chancroid. The second part, by Dr. Hayden, is devoted to a consideration of syphilis. It is with a sense of relief that one passes from the first to the second part, and one is refreshed by the transition. In the first part the essential facts are so often obscured by looseness of language, by indifference of style and diction, by lack of clearness of expression, that the reading becomes a task attended with fatigue and disappointment. The personal pronoun in the first person is so indiscriminately used in the plural or singular that one is at times in doubt as to the authority for the statements made. The wide range of subjects included in the second part is, on the other hand, treated with a conciseness, clearness, and completeness that command admiration and excite interest.

In no part of the work is a word said of synovitis—rheumatism, it is commonly called—as a complication of gonorrhea. This omission must be considered culpable, for the inflammation of the synovial membrane is sometimes followed by permanent impairment of the function of the joint. A little more stress, too, might have been laid upon the risk of fatal ascending pyelonephritis in the course of gonorrhea or of organic stricture of the urethra. We cannot agree with the dictum that directs the poulticing of a bubo as soon as its "character is made out by the rapid swelling and area of redness and the presence of a chancroidal sore;" nor have we a fear that if the bubo be "not thoroughly poulticed and have not well suppurated before opening" there will remain "much tissue in a half-necrotic state that must be scraped out with sharp spoons before packing." It is not an unnecessary caution to warn the operator of the danger of injury to the iliac vessels in the operative treatment of bubo, as well as the possibility of grave hemorrhage from ulceration.

The employment of glycerin, vaseline, or cosmoline as lubricants instead of olive oil, especially when rubber catheters are employed, is strongly recommended.

Operation is advised for stricture when the health of the patient is reduced, when cystitis exists, with retention of urine and loss of sleep; when there is renal disease, when time is an element of importance to the patient, and when the stricture is resilient. When the stricture is situated anteriorly to the triangular ligament, internal urethrotomy should be performed; when situated posteriorly, external urethrotomy.

The etiologic relation of syphilis and posterior spinal sclerosis is dubiously dismissed in a few words, despite accumulating evidence that tends to demonstrate the intimate connection between preëxisting syphilis and the subsequent development of the disease of the cord.

Surely the English language is rich enough in words to obviate the necessity for employing, in a work printed in English, only the French names for some of the syphilides.

PULMONARY CONSUMPTION: A NERVOUS DISEASE, CONSIDERED AS SUCH FROM A PRACTICAL, A CLINICAL, AND A THERAPEUTIC STANDPOINT. By THOMAS J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. 12mo, pp. 185; paper. (Physicians' Leisure Library.) Detroit, Mich.: George S. Davis, 1891.

THE author says in his preface that "this essay is an effort to give a rational account of the principal causes and of the nature of pulmonary consumption, and has been written in the belief that no theory of the origin of disease can ever earn the right to permanent existence if it falls short in pointing out the path through which the disease may be prevented or alleviated." He rejects entirely the bacillus theory, and believes that the neurotic theory propounded in his pages explains most, if not all, of the varied and apparently opposing phenomena constantly observed in this disease, while it also serves the practical purposes of pointing out the means and methods of rational and successful treatment.

There is much logical argument, much unproved

speculation, much valuable compilation of statistics, much hyper-theoretical criticism to be found in these pages. The importance of hereditary influence, and especially of the physical conditions of the parents, independent of actual disease, is well set forth, and should be carefully studied by all intelligent physicians. The neurotic theory, however, seems to us too narrow. The nervous failure in consumptives is but part and parcel of the general nutritive failure, for which as yet we have no satisfactory term. Dr. Mays lays great stress upon rest in the treatment of consumption as a means of conserving the vital energies of the patient. He administers antipyretics to diminish waste of tissue consequent upon fever [a principle, but not a method, that we indorse], pays due attention to the digestive system, and gives most nourishing food. In addition, he administers cod-liver oil, hypophosphites, resorts to massage, galvanization of the pneumogastric, inhalation of oxygen, nitrous oxide, and compressed air, pulmonary gymnastics, and any other agent or agency that has power to enhance the local and general nutritive tone of the body.

NEWS ITEMS.

The Influenza Bacillus.—As we go to press the newspapers contain a cable report from Berlin that Dr. Peifer has discovered a bacillus deemed the specific cause of influenza. The microbe is said to be very minute, to resemble the micrococcus pyogenes, and to have been successfully isolated and used in inoculation experiments. It is scarcely necessary to add that such reports may be false in part or entirely.

Influenza a Contagious Disease.—According to telegraphic dispatches, the authorities of Dover, England, are attempting to cope with influenza by a rigorous application of the laws pertaining to the public health, which make it an offence for a person suffering with a contagious disease to visit public places. A number of persons who were suffering with that malady, and who had frequented public places, were charged with violation of the health law. They were convicted, and each of them was fined £5. It is believed to be the first instance, in England at least, of persons suffering from influenza being fined for endangering the public health by coming in contact with the general public.

Influenza in Horses.—It is said that an epidemic resembling influenza is causing ravages among horses at Normanton, England. In three coal mines twenty horses have died, and eighty are ill. Work has been stopped in the mines, and thousands of miners are idle.

Medical Legislation in Ohio.—At a recent meeting of representatives of the faculties of eight medical colleges of Ohio, a resolution was passed requesting the legislature to enact laws embodying:

1. The creation of a board or boards of medical examiners, in the composition of which equitable and just representation shall be accorded to the various recognized denominations of medical practice.

2. The examination of all candidates for the practice of medicine holding diplomas hereafter issued by medical colleges which shall be deemed in good standing by the board.

3. Exemptions from examination to extend only to those who at the time of the enactment of this law shall be recognized as legal practitioners within the meaning of existing statutes; but all legal practitioners shall be required to register.

4. A penal clause which shall secure the enforcement of the foregoing provisions.

The Berlin Academy of Science has appropriated twelve hundred dollars for the publication of scientific works. Three hundred and seventy-five dollars will be devoted to *The Law of Transformation of the Bones*, by Julius Wolff, of Berlin; five hundred dollars to *The Progress of Physics*, issued since 1847 by the Berlin Physical Society; and one hundred and eighty-seven dollars for the *Formulation of a Uniform Anatomical Nomenclature*, which for two years has been in preparation by the German Anatomical Society.

Prostitution and Syphilis.—It is proposed to hold in Paris, in 1893, an international congress composed of physicians, jurists, hygienists, economists, and sociologists, for the study of questions relating to prostitution and the propagation of syphilis.

An Army Medical Board will be in session in Chicago, Ill., during February, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before January 15, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate of a regular medical college, as evidence of which his diploma must be submitted to the Board. Further information regarding the examinations may be obtained by addressing the Surgeon-General of the U. S. Army, Washington, D. C.

Charles Meigs Wilson, M.D., third son of the late Dr Ellwood Wilson, died a short time ago at Knoxville, whither he had gone to occupy the chair of Gynecology and Diseases of Children in the University of Tennessee.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.